

Rice University

***AMPLIFIED ENCOUNTERS AT HIGH SPEED***

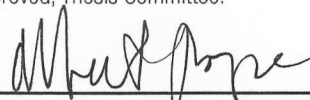
by

**Rebecca Marie Sibley**

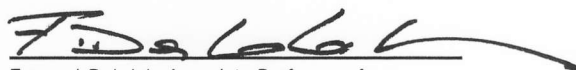
A Thesis Submitted  
in Partial Fulfillment of the  
Requirements for the Degree

**Master of Architecture**

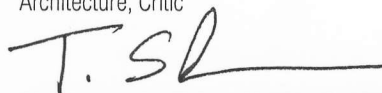
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## **ABSTRACT**

***AMPLIFIED ENCOUNTERS AT HIGH SPEED*** by Rebecca Sibley

This thesis expands upon the dialogue between speed and architecture, investigating how architecture reinterprets the linear city, originally defined by the continuous fabric of the freeway and more recently reconfigured by the high speed rail line. Using the linear city as a site of exploration and high speed rail as a ground to test new typologies of architectural insertions at amplified speed, this thesis produces an extended civic space along the proposed high speed rail line connecting Tampa and Orlando. Combining a series of performance and commercial programs, this new typology will make the obscured visual experience along the extended territory of the rail line legible, through a sequencing of specific architectural intersections, exploring how monumental civic space will be made and occupied in the sprawl of the American city.



## **ACKNOWLEDGEMENTS**

To Troy, for keeping me in step with my thesis goals, unscrambling my jumbles of ideas, and helping me toe the line.

To Albert and Sarah, who provided incredible wealth of feedback and support for an ambition manifesting itself over a year of thesis work.

To the indispensable Maria Batista, Aaron Bush, Eunike, Alexander Hohman, and Yoni Pressman, whose help in that final push made so much possible.

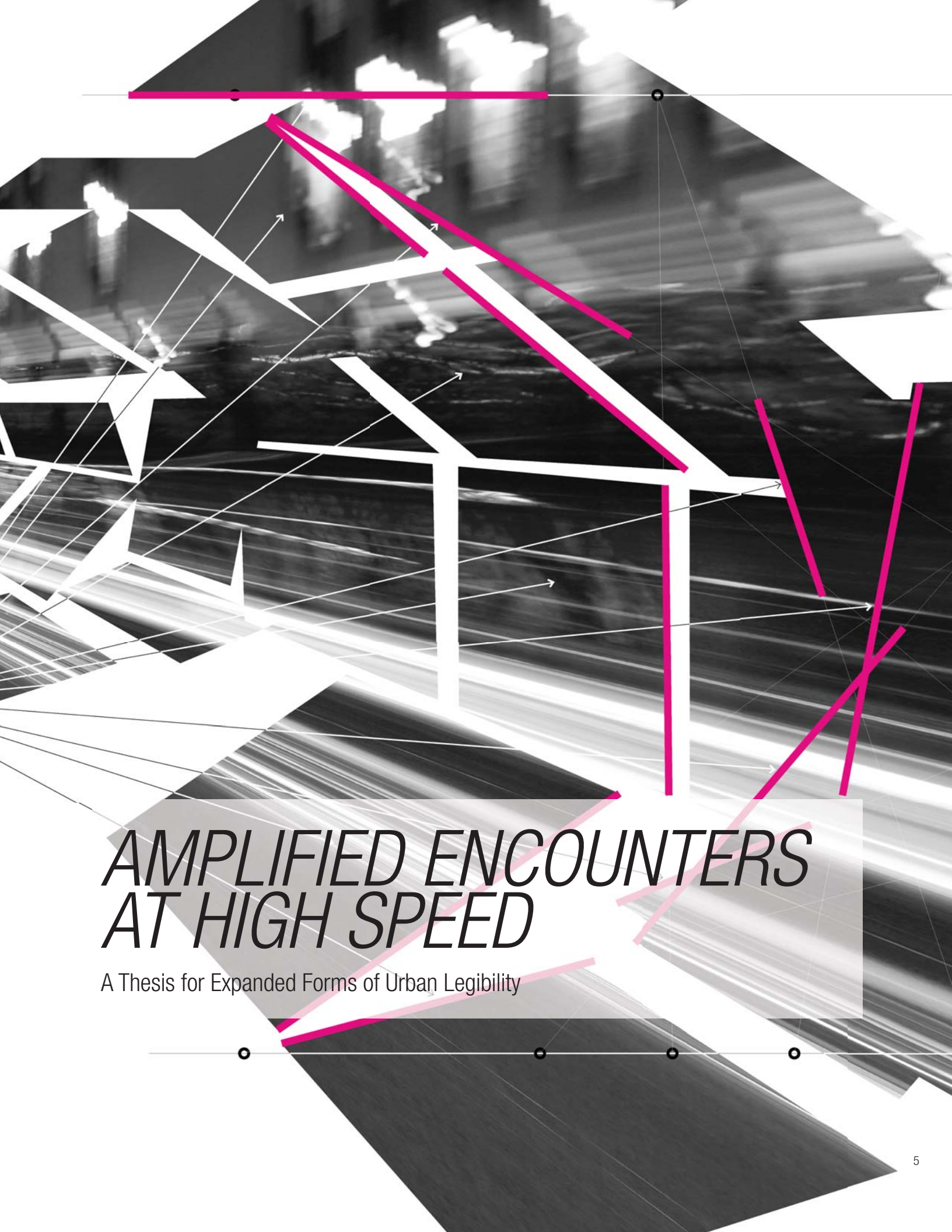
To my studio mates, for an exceptional two and a half years.

To Mom, Dad, Sarah, Michael, and John, for rushed phone calls, food, and all the encouragement that one could ask for.

To Charles; without your support, this thesis would not have been completed.

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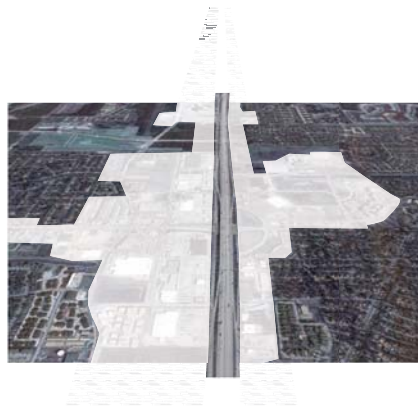


# *AMPLIFIED ENCOUNTERS AT HIGH SPEED*

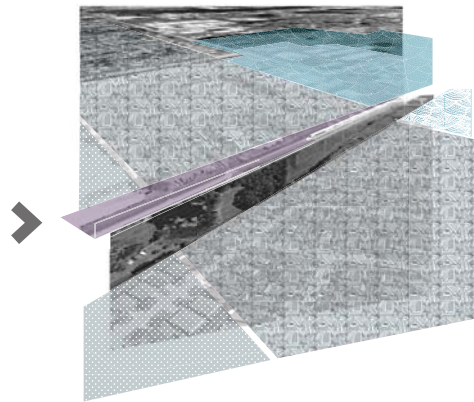
A Thesis for Expanded Forms of Urban Legibility

## THE PROBLEM OF URBAN LEGIBILITY

The inescapable experience of accelerated and trajectorial movement has forever altered our perception of object and space. Velocity fragments and blurs, simultaneously collapsing and expanding our field of vision to such a degree that perception remains fragmented outside of the realm of mechanical speed. This shifted vision does only not affect moving past architecture, but also moving through architecture, resulting in a discontinuous experience of the spaces we view and inhabit.



**Freeway** *A generic set of conditions composes the horizontally dispersed, endless city.*



**High Speed Rail** *The introduction of the high speed rail requires a redefinition of architecture's intersections between speed and city.*

The ongoing dialogue between speed and architecture has been continually explored as a result of the boundless expansion experienced by the post WWII freeway city, perhaps most notably in the writings of Venturi Scott Brown in 1977's *Learning From Las Vegas*.

With the initiative for American high speed rail close to fruition, a new wave of high speed infrastructure will reconfigure how we live and operate in the city, beyond the freeway. The introduction of the high speed rail into the freeway city requires a redefinition of architecture's intersections between speed and the contemporary city, by pushing its limits: accelerating speed and defining new urban legibility for the post-highway city. This thesis questions how architecture reinterprets the city that is both defined by high speed of the rail and the continuous fabric of created by the freeway.

## EXISTING URBAN LEGIBILITY

A vast system of freeway and transit infrastructures defines our understanding of urban density and suburban sprawl. A tension exists between our sped-up perception (flat, imaged, fractured) and the experience of legibility within the city. For many, the city and its architecture is experienced through the lens of fast movement down the freeway, cut into dense urban fabric or dominating suburban growth, where image, sign, and instant legibility reign adjacent to transitory infrastructure. The shift to an explicitly visual emphasis on space, simultaneously experienced through media, culture, and technology, demands that we reevaluate the legibility of architecture as it exists in a state of constant bypass and visual confrontation.

Increasing dependence on the freeway has resulted in an urban fabric held together by an infrastructure that accommodates speed for the independent traveler. The freeway city lacks the urban coherency that density provides, and urban perception becomes obscured, lost within the transitory spaces of and adjacent to the freeway. The car is necessary to experience the city at the rate and scale for which it was designed, the metropolis revolving around the freeway.

## FREEWAY CITY

The freeway has become the site of new collectivity within the city. No longer does the city revolve around collective experiences through interpersonal exchange; rather, the freeway gathers individuals into one large transitory network, reinforcing isolation by maintaining the separate structure of the vehicle, but collecting the city dweller into arteries of high speed (or traffic logged) movement throughout the city. The subject and its perspective become independent of each other, one on a spatial trajectory at 70 miles an hour and the other attempting to make visual sense of the city.

Characterized now by transitory circulation, the traditional city space is fragmented; objects are isolated and the city is transformed into a composite of generic, repetitive elements. Architecture's place in the city is obscured, as the commercial image and strictly visual become the dominant component in the cityscape, defining the visual landscape and transforming urban space. "Instead of concentration - simultaneous presence - in the Generic City individual 'moments' are spaced far apart to create a trance of almost unnoticeable aesthetic experiences..." (Koolhaas, "The Generic City")



**Contemporary Urban Legibility** View from inside the car  
Image from *Zoomscape: Architecture in Motion and Media* by Mitchell Schwarzer.

## SIGN OVER ARCHITECTURE: THE DOMINATION OF THE COMMERCIAL IMAGE ALONG THE FREEWAY LANDSCAPE

Visibility from the highway is dominated by commercial image that exists at the scale of and adjacent to the highway. The individual frames of perception are literally translated into static signs that punctuate the air and land adjacent to the highway, visual sequences for the designed for the viewer in motion. This architecture of styles and signs are anti-spatial, that these symbols of communication dominate space (Venturi). Adjacent to this overwhelming signage, the architectural object is also subject to notions of legibility sacrificed to speed. Strategies of ornamentation are used at varying scales in order to make the building "stand out." However, "because the spatial relationships are made by symbols more than by forms, architecture...becomes symbol in space..."



*Highway, suburban sprawl, and city center.*



## LEGIBILITY OF THE ARCHITECTURAL OBJECT

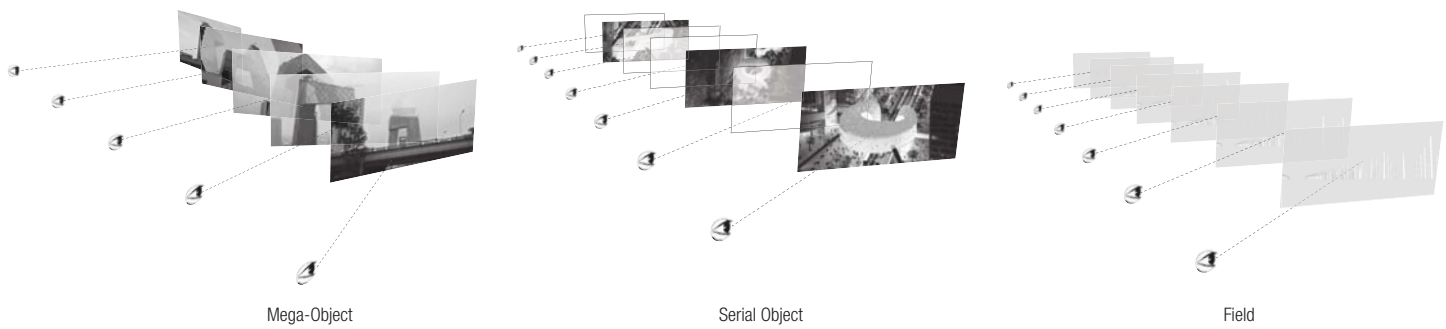
### HIGHWAY LEGIBILITY: SCALE, SEQUENCE, AND THE INSTANTANEOUS

Moving at increased velocity down the freeway renders the architectural object within the city into a series of individual, successive frames located within the blur of speed: "motion and space felt in a continuous sequence." These sequences move in and out of clarity as the driver's cone of vision is (hopefully) focused on the road; the passenger's eye is able to wander more freely from the vantage point of highway speed. As speed increases, clarity decreases as objects rush past in a constantly shifting visual field.

To be legible through the lens of high speed, architecture must be big: big signs, big boxes, big shape. The visual communication of the object to the viewer grows in importance as the highway continues to be privileged space where people spend increasing amounts of time, space where architecture and the sign battle for visual dominance of the cityscape. Architecture's instantaneous perception is increasingly necessary.

A number of typologies have been explored based on the legibility of the architectural object and the speed of the highway: among them are the mega-object, the serial object, and the field.





## MEGA-OBJECT

The freeway's relationship with the city has shifted dominant typology to the immediacy of the graphic, to objects of instantaneous perception.

*Shape* An instantly perceivable architecture that is independent of its reliance on form or mass in its ability to be instantly read as a three dimensional graphic, operating similarly to sign and image. It explicitly and quickly communicates itself to the viewer. Shape exists at amplified scales, and is therefore easily observable from a distance. It is instantly perceived from multiple perspectival points. Time needed for perception is compressed, related to approach and passing; perception is instantaneous, but lacks content, immediacy giving way to superficiality.

*Related to Shape is the 2D Graphic* Architecture and urban space can be defined through signs and symbolic images that are quickly and easily perceived at high speeds across the vast spaces of the highway. Recognizable to certain populations, the impact of the 2D graphic comes from the meaning of its symbols; form becomes secondary. The hi-res graphic relies on contrast and bigness, to be read across vast space from moving cars. Shape is the three dimensional manifestation of the graphic and is instantly perceived; the graphic also grants instantaneous perception.

## SERIAL OBJECT

The repetition of form or large scale images far apart in space and time, gathered in a certain sequence into a single meaningful concept. Interval, scale, and type can be modulated to produce varying perceptual effects. The perspectival sequence of individual, sequential images of unique form or image at high speed punctuate the generic landscape. When absorbed sequentially through vision, allows for a translation of legibility within the larger urban context. Time needed for perception is broken down (accommodating for individual recognition) and extended (drawing together into a legible sequence).

## FIELD

Extended duration, or length operates within the sustained viewing of continuous landscape. The horizontal, endless or bound, constructs a temporal and formal continuity that permits unbroken, continuous views at high speeds. Perception is unfolded along the length of the expanded field, resulting in a lengthy temporal experience.

Exploiting these typologies, the infrastructure and speed of the rail act as a ground to test new forms of legibility: continuity through sequential moments of intersection between architecture and speed. New typologies of architectural legibility become necessary with amplified speed and the contemporary condition, objects that put behind them the easiness of shape, and that take advantage of collective form.

## AMPLIFIED SPEED AND THE CITY

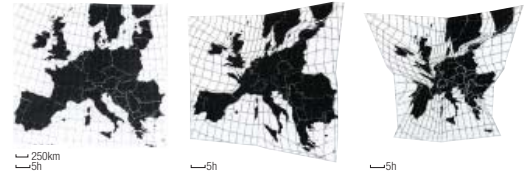
Pushing the limits of the contemporary city to the accelerated speed of post-highway urbanism leads to high speed rail. Super-networks facilitate high-speed connections at multiple scales: from regional, national, to global, shrinking both distance and time along corridors connecting dense urban centers. These high speed connections create singular entities out of multiple regional cities, strung along the lines of the rail. A new type of linear endless manifests itself within these corridors, shifting between the urban, suburban, and landscape.

The linear city, created and reinforced by the highway will experience a shift in infrastructure and speed with the introduction of the high speed rail. If the sign became the response to the speed and urban effect of the highway, what becomes legible at the blur of 170 mph?

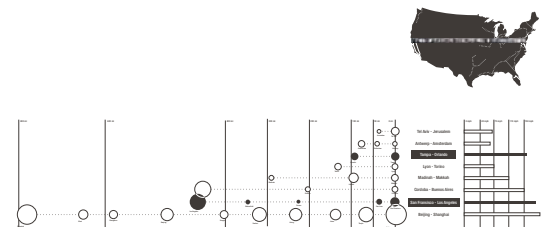
### SHIFT IN SPEED LEADS TO SHIFT IN PERCEPTION

The amplification of speed leads to a shifted perception of the city, from the highway experience of roadside signs and buildings to a blurred panorama of quickly passing urban and rural landscapes, where both time, distance, and experience of the city are collapsed. The insertion of high speed rail between freeway cities radically alters their relationship, shrinking both distance and time along corridors connecting dense urban centers.

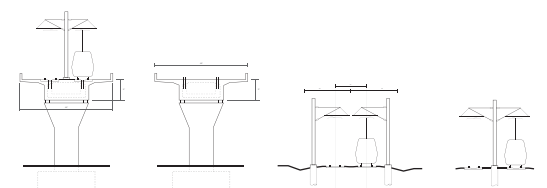
A new spatial typology can be found along these lines of high speed, a further territorial blurring between landscapes of the urban, suburban, and rural. Our perception as collective, high-speed subjects is simultaneously bound, by both the frame of the window and the limits of our visual perception when exposed to speed, and expanded, by the linear endlessness between stops.



Map of Europe in which real distances seem shorter thanks to the high-speed train. Image by Joan Busquets, in *Barcelona: The Urban Evolution of a Compact City*.



Proposed high speed rail connections by distance, city size, and speed.



High speed infrastructure

A photograph of a highway interchange with a water tower in the background. The text "70 MPH" is overlaid in large, bold, black letters.

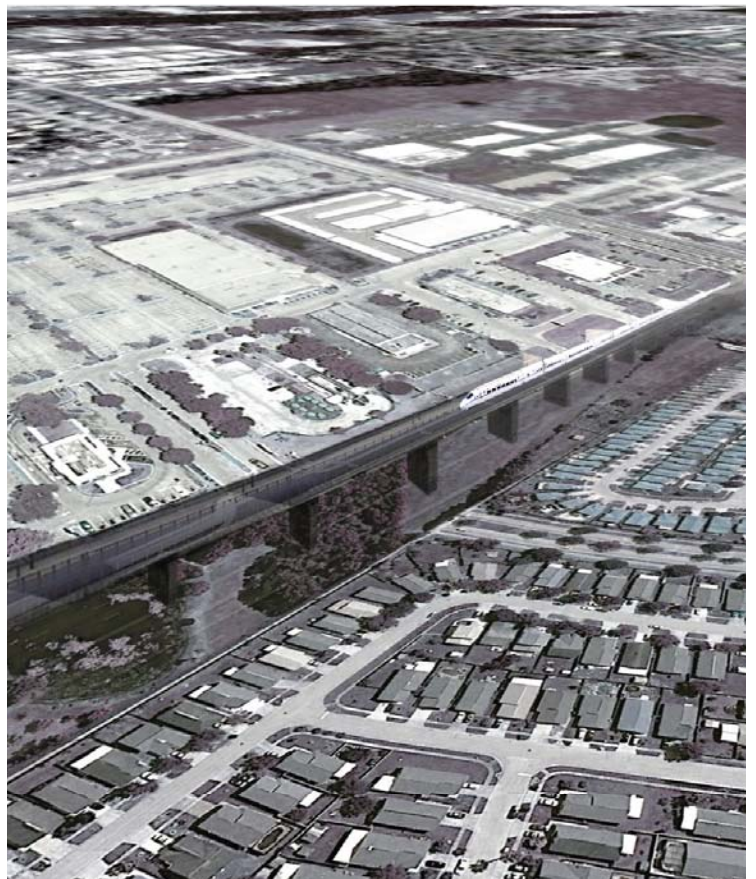
**70  
MPH**

A blurred photograph of a highway at sunset. The text "170 MPH" is overlaid in large, bold, black letters.

**170  
MPH**

*The amplification of speed leads to a shifted perception of the city, from the highway experience of roadside signs and buildings to a blurred panorama of quickly passing urban and rural landscapes, where both time, distance, and experience of the city are collapsed.*

*The new wave of high speed rail infrastructure will reconfigure how the city is occupied. How does architecture interpret the city that is both defined by the high speed of the rail and the continuous urban fabric created by the freeway?*



For the freeway city, the sense of space is based on speed and duration of the car within the growing metropolis. With the amplified speed of the rail, a new sense of space required, existing at the scale of the region. This is a challenge to urban form.

#### FROM ENDLESS CITY TO ARCHIPELAGOS

The linear endlessness that manifests itself along high speed corridors, shifting between built densities and landscape, is not an immediate spatial experience: built fabric and the traveler are separated by speed and its infrastructure. Urban, suburban, and landscape conditions are bypassed for the sake of the regional network, swaths of forgotten interstitial space that connects dense hub to dense hub.

The high speed experience is comprised of a linear string where destinations are privileged over connective tissue, archipelagos spatially differentiated and bound by the network within a boundless condition. The bypass of the generic, of endless urban tissue that forms a new territorial city, at high speed will hardly register as more than a streaming blur of object and light to the passenger more concerned with their handheld streaming video.

Using the high speed rail as a means of investigating the effect of speed on both the city and the architectural object, the rail corridor becomes a datum for architectural insertions to act as visual markers of the territory of the rail, and to provide programmed spaces for the surrounding region.



*What is legible at the blur of 170 MPH? Speed and extreme urban conditions bring to light amplified issues of legibility: post monument, post sign.*

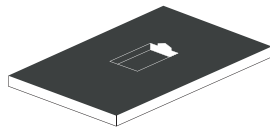


## URBAN FORM AND THE COLLECTIVE

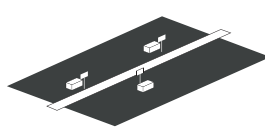
At the scale of the city, the dispersal of collective urban form is reinforced by the freeway and speed: from traditional nodes of urban form dealing with the collective, to operating specifically in relation to the endless city, to theorizing architecture as object within issues of space and speed.

The transformation of the city, from centrally defined to the dispersal and fragmentation of the post-war metropolis, provides the set of urban conditions about to change with the layering of high speed rail infrastructure. Within the traditional city, historical centers acted as a “stronghold of traditional public spaces.” In the contemporary metropolis, historic centers lose their importance as larger fragmented metropolitan fields grow unrestricted around them. Traditional forms of public space compete with a new emphasis on individuation that suburban growth and contemporary life fosters. Drawing from the conclusion that the contemporary city lacks a corresponding space for collectivity, multiple architects have produced methodologies to address the tension between the centered traditional city and the dispersed contemporary metropolis.

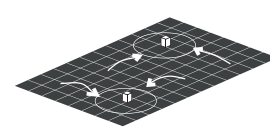
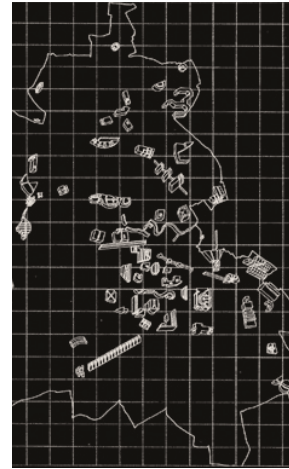




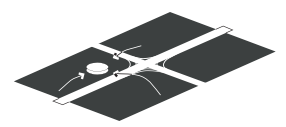
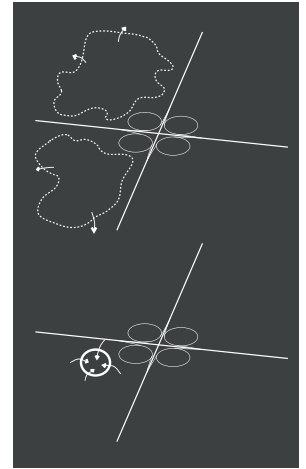
**ROWE** ROMAN PIAZZA



**VENTURI** DISPERSED INDIVIDUAL MONUMENTS  
TO THE COLLECTIVE



**UNGERS** MONUMENTAL GROUPING OF  
MONUMENTAL OBJECTS



**SERT** SPECIFIC ARCHITECTURAL OBJECT FOR  
DISPERSED CITY

*Rowe* The centralized gathering space fails within the dispersal of the linear city rooted in freeway travel;

*Venturi* Directly addresses the endless growth of the city through a new legibility, but denies the expression of the architectural object for sign;

*Ungers* The failed, expanded city is recentralized by the collection of individual monuments and the spaces between them;

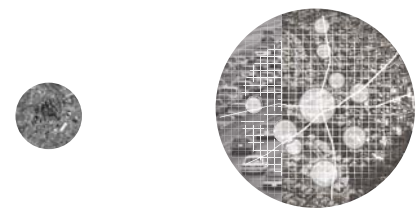
*Sert* Urban decentralization can be combated with compactness and centrality.

At the scale of territory, there is a need to operate at the urban level of infrastructure, rather than depending solely on the independence of individual form to operate against the dispersal of the city. Acknowledgement of the large scale region is needed with a re-evaluation of the contemporary collective.

## SHIFTING URBAN SCALES: THE LINEAR CITY

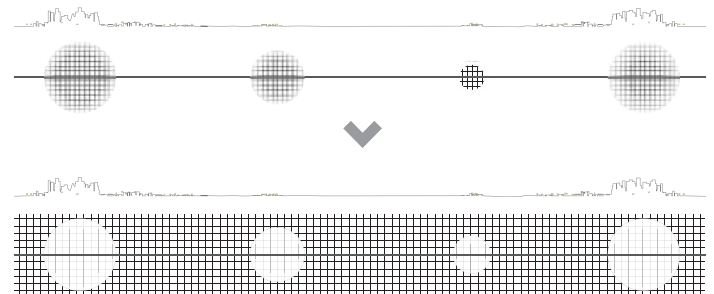
The dispersed urban form of the linear city now exists at the scale of territory. From the previously centered city, the dispersal of the metropolis operates as endless space, a growing, uncontrolled, and self-organizing system.

Connected by freeways, the linear city is sprawling and continuous. The American city of the 21st century is part of a new type of urbanism; it is not the traditional centered city of the previous century, but a city that is dependent upon the networks of infrastructure that created it. It pushes development further, beyond the unrestrained growth of merging freeway cities to the development and recognition of the larger scale region. This urban phenomenon will be reinforced by the introduction of high speed rail, connecting city to city, acting as a secondary system of networks that identify with territory.



*Centrally organized city*

*Freeway city as a series of points*



*Freeway-connected cities expand to the scale of territory*



*Layering of high speed rail infrastructure*

## CONTEMPORARY DISPERSAL OF CIVIC SPACE AND MONUMENT

The contemporary dispersal of collective space parallels the growth of the linear city. The monumental core of the city, once definitively linked to legibility within the city, and has faded in importance as cities spread out and fragment. Cultural institutions and collective spaces that were anchored within the city now exist without a cohesive framework, disconnected from the city spatially and physically, with the very idea of monument shifting as well, questioning the single object's ability to define or represent the collective.

Following Venturi, for whom modern monuments exist as an aggregation for the individual, the discussion of the monumental returns to the idea of the singular object to the collective: the Monumental Object, dependent on form. Ungers, like Sert and Rossi, understood the

*Aerial photograph of Orlando, Florida*





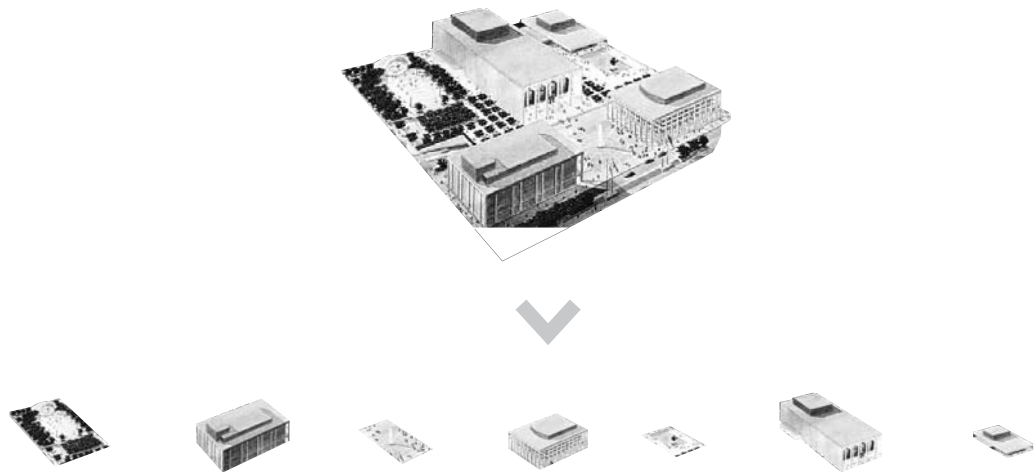
importance of establishing a new relationship between monument and city, and created a new condition through Grossform that was the monumental grouping of monumental objects: reasserting the monument through collective relationships of multiple forms. For Koolhaas, the condition of the monument is not a specific object or collection of objects, but rather a platform for event. Monument as object is transformed into monumentality as affect, a grouping of non-formal things, of program and content.

The contemporary language for collective monumentality exists separately from the 21st century realm of the shifted visual / perceptual paradigm, referencing the nostalgic or the spectacular in order to achieve monumental status.

This thesis reasserts the monumental within the expanded metropolis, using infrastructure as an anchor and operating within the relationship of infrastructure, speed, and the city.

#### FORMAL RESPONSES TO CONTEMPORARY COLLECTIVITY: OBJECT AND PLATFORM

The gathering of infrastructural elements creates a platform for the distribution of content, a large scale condenser of the collective. The interaction between objects becomes the defining characteristic of collective form, where the full impact of the response to contemporary collectivity is not realized as a singular object, but instead when it operates at the level of assemblage, beyond the singular architectural object, beyond form, and at the scale of the urban, whether it is the large scale urban move or the aggregation of insertions.



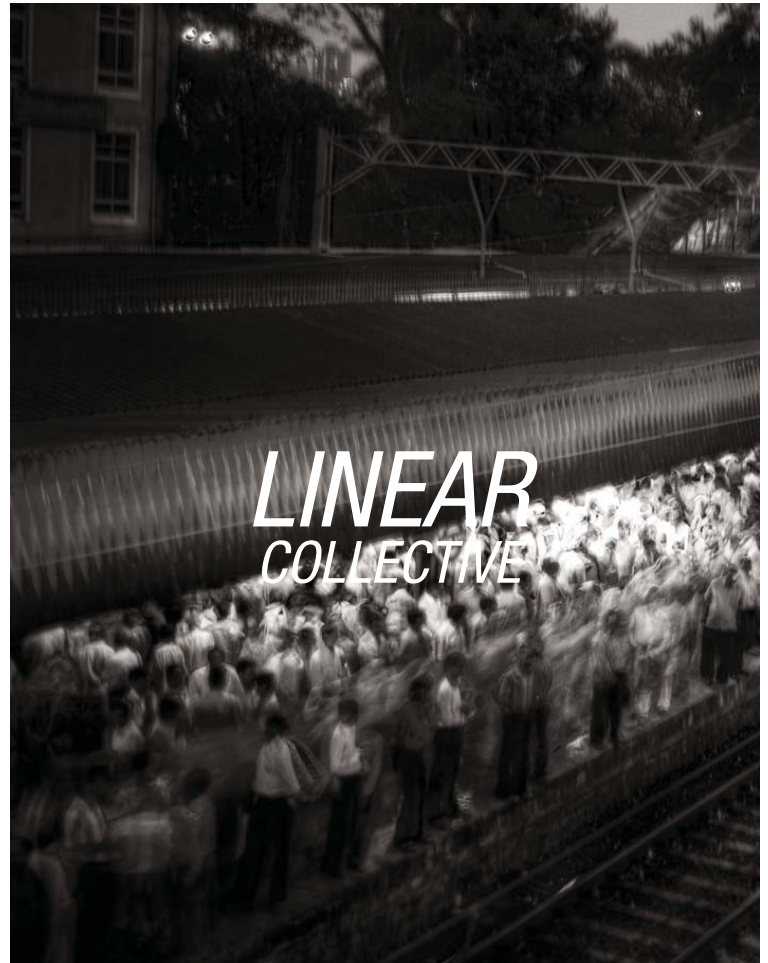
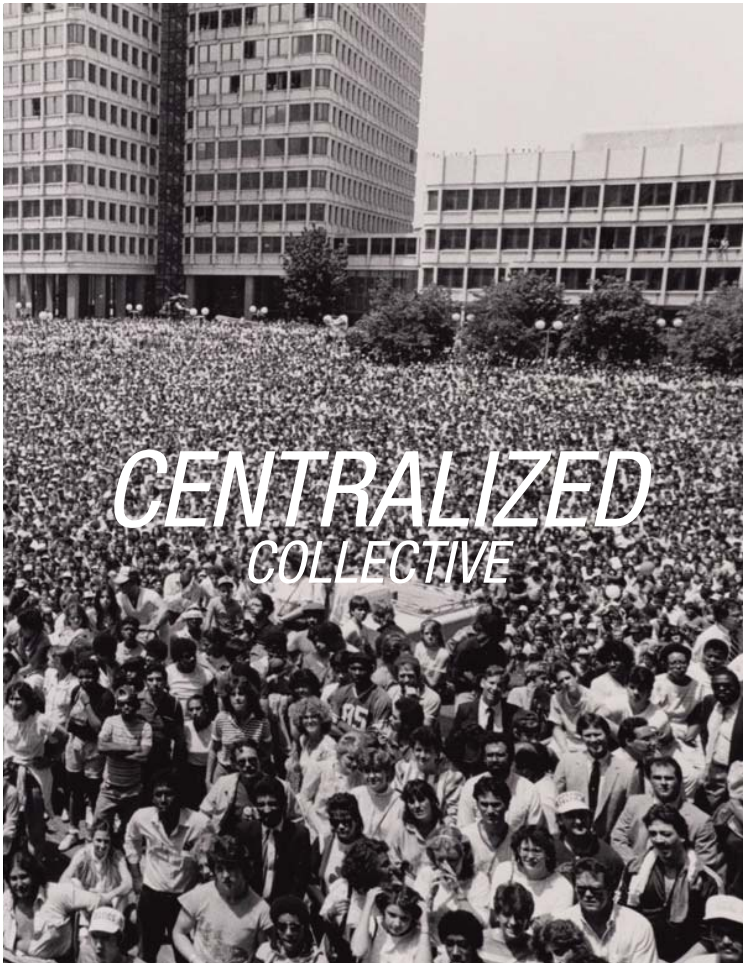
#### LINEAR CIVIC CENTER

Redefining traditional forms of collectivity for the linear city, a new type of civic space is extended along the high speed rail line. By creating an expanded civic center, a new form of monumentality is declared for the large scale linear city confronted with high speed rail. Replacing the urban super block of Lincoln Center and the solitary and spectacular Disney Concert Hall, the linear center explores how performance centers are made in this new kind of city. Rather than placing new monuments within the centered city skyline, the linear civic center

extends the experience of a civic and public space within generic dispersal along the high speed corridor. By breaking up the super block into a collection of insertions, the experience of the complex is aligned with the amplified speed and space needed to view each object. Insertions act as multiple, bounded sites, using distance, punctuation and rhythm as means for cohesion and experiential continuity. The expanded complex operates at two scales: that of high speed, and that of the user.

The linear center operates at the urban scale of infrastructure. It is a reworking of the urban to provide for a new organization of the collective through programmatic means, through a multiplicity of event and scenario. The repetition of objects creates a new totality out of singularities, exploring this as new monumentality, using the totality of collective form against dispersion. This monumentality is not dependent on traditional forms of context, but instead to infrastructure, urban condition, speed, and program. The forms are both bound in form and unbound as a collection. It is as much about the singularity of the super large object as it is the relationship with urban condition, and the space between the two. These new architectural typologies are both object and framework for activity.

*The contemporary condition of the linear city calls for a re-evaluation of collectivity, reflecting the shift from centralized to expanded, and ultimately translating these new spatial relationships into new formal organizations.*



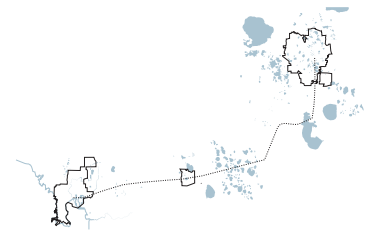
## 100 MILES OF LINEAR CITY

With suburban development rapidly infilling the landscape between, Tampa and Orlando have expanded into one Very Large City, stretching for 100 miles along a connecting system of freeways. The region has begun to quietly identify itself not as two separate cities, but instead as one “mega-region,” with a population estimated to almost double by 2050.

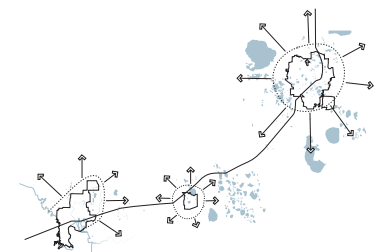
The area is one of two sites for American high speed rail to be built by 2015. There are three stops between the two cities: Lakeland, Disney World, and the Orlando Airport.

Continued growth spans between Tampa and Orlando. Two generations ago, cities and towns were connected by the rail line, with scarce road connections providing difficult travel between locations. The traditional centers of cities and towns between Tampa and Orlando are located along this rail line. As turnpikes and highways linked the two larger cities in the 1960s, freeway-centered growth began to dominate central Florida, with small towns expanding along the freeway, creating a textured landscape of signage, building and orange grove on the 70 mph drive from one metropolis to the next. As urbanized areas continue to expand, individual archipelagos within the agricultural landscape begin to lose their distinct boundaries, growing at freeway speeds along freeway trajectories.

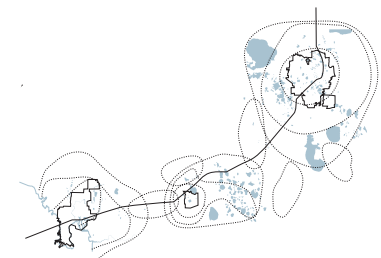
A projection of urbanized growth over the next thirty years clarifies the position of central Florida's endless city. The introduction of high speed rail into this boundless condition will create a new series of points and centers defined by rail stops, connected by high speed and accessible from one end to the next within an hour's time.



*Traditional city boundaries*



*Freeway connection and city expansion*



*Merging cities*



*Dispersed cultural public hubs*

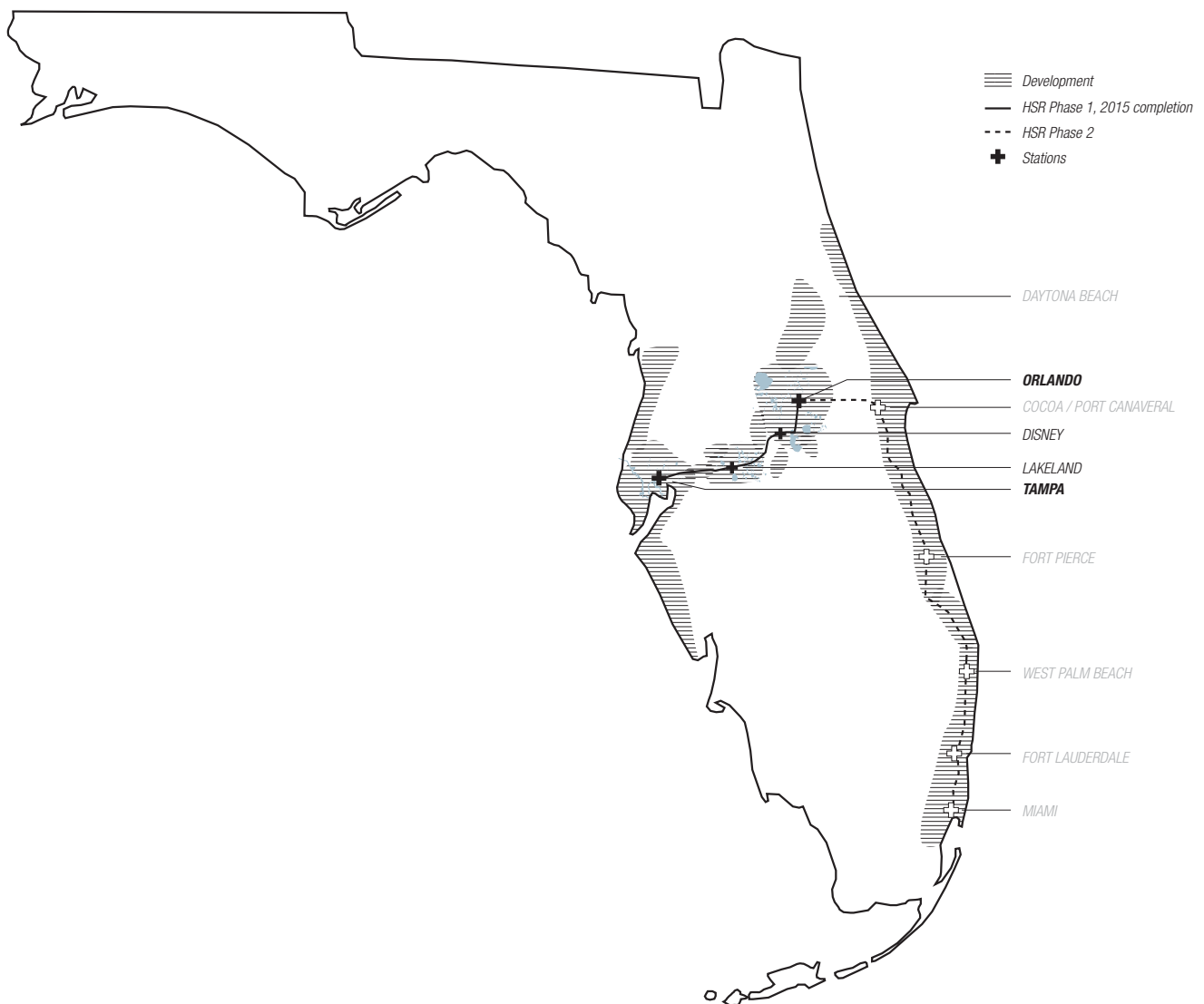




South west expansion of Orlando along Interstate 4.  
<http://www.flickr.com/photos/jared422/4599229131/>



Proposed Florida high speed rail corridor  
and surrounding development



## EXPANDED LEGIBILITY

Working to define legibility along sites of high speed result in mediating between multiple scales: the scale of the larger territory, the scale of the passing landscape (for the high speed subject), and the immediate scale of occupied form (the pedestrian subject). Organizing the relationships between these scales at the speed of the rail means both visually and spatially translating velocity through geography. Strengthening the interstitial will give greater urban coherence between cities. End-hubs will receive gateways into their cities, the bypassed will have a pronounced relationship the surrounding urban condition.

Three different zones of urban development are identified and called out along the rail corridor, marking the landscape and acting as points of visual identification from the train. I am focusing on the 27 miles east of the second stop, Lakeland, where three insertions at differing speeds and differing urban conditions exist: the gridded urban, the super block commercial, and the suburban / rural.

The speed of the rail as it bypasses these sites increases with distance from the station and is broken down into three speeds: 0 - 70 mph, 70 - 140 mph, and 140 mph to the top speed of 168 mph.

A typology of architectural objects, not sign, is established, calibrated to varying speed and urban conditions.

### LINEAR CIVIC CENTER

In order to make a new kind of civic space in what is now a continuous linear city, performance and civic spaces, traditionally condensed programs, are distributed along the line of the high speed rail.

Multiple scales of performance spaces are combined with commercial spaces to replace traditional municipal programming as the site of contemporary publicness. Program is organized by scale into small, large, and extra large, and is distributed according to urban conditions: small scale grid, large scale super block, and extra large scale suburban and agricultural landscape. These collective spaces are distributed along the high speed corridor as a series of architectural objects that intersect the rail in the form of the serial object, frame, and field.

The perceivable scale of each typology shifts in relation to the varying speeds of the rail and urban condition: slower speed / urban grid / objects, fast speed / large scale superblock / frame, fastest speed / extra – large scale landscape / field.

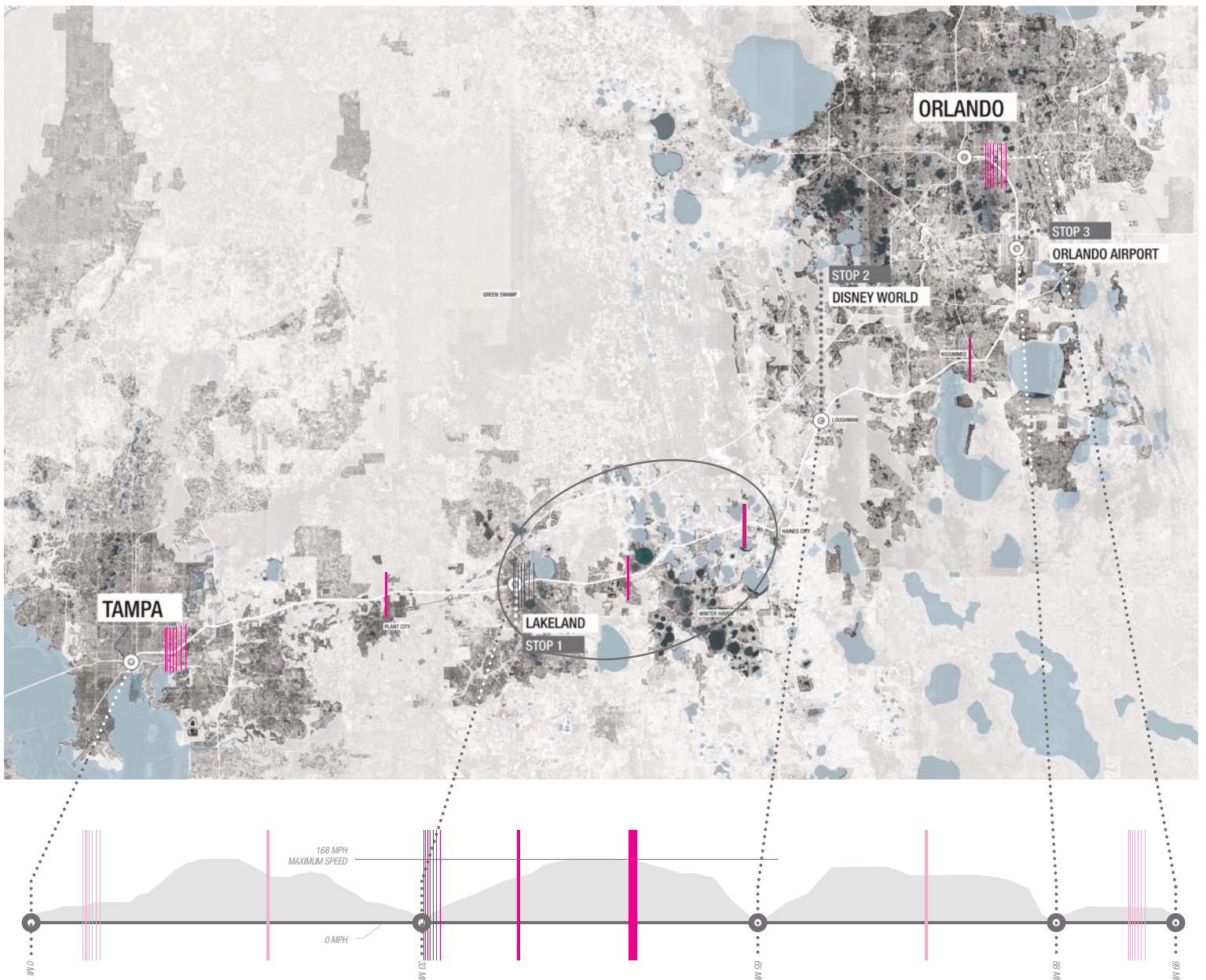
As objects intersecting the high speed corridor, these insertions are not only legible as objects, but also as a sequence of momentary internalization, brief placements within these internal worlds created by the serial object, frame, and field at high speed.

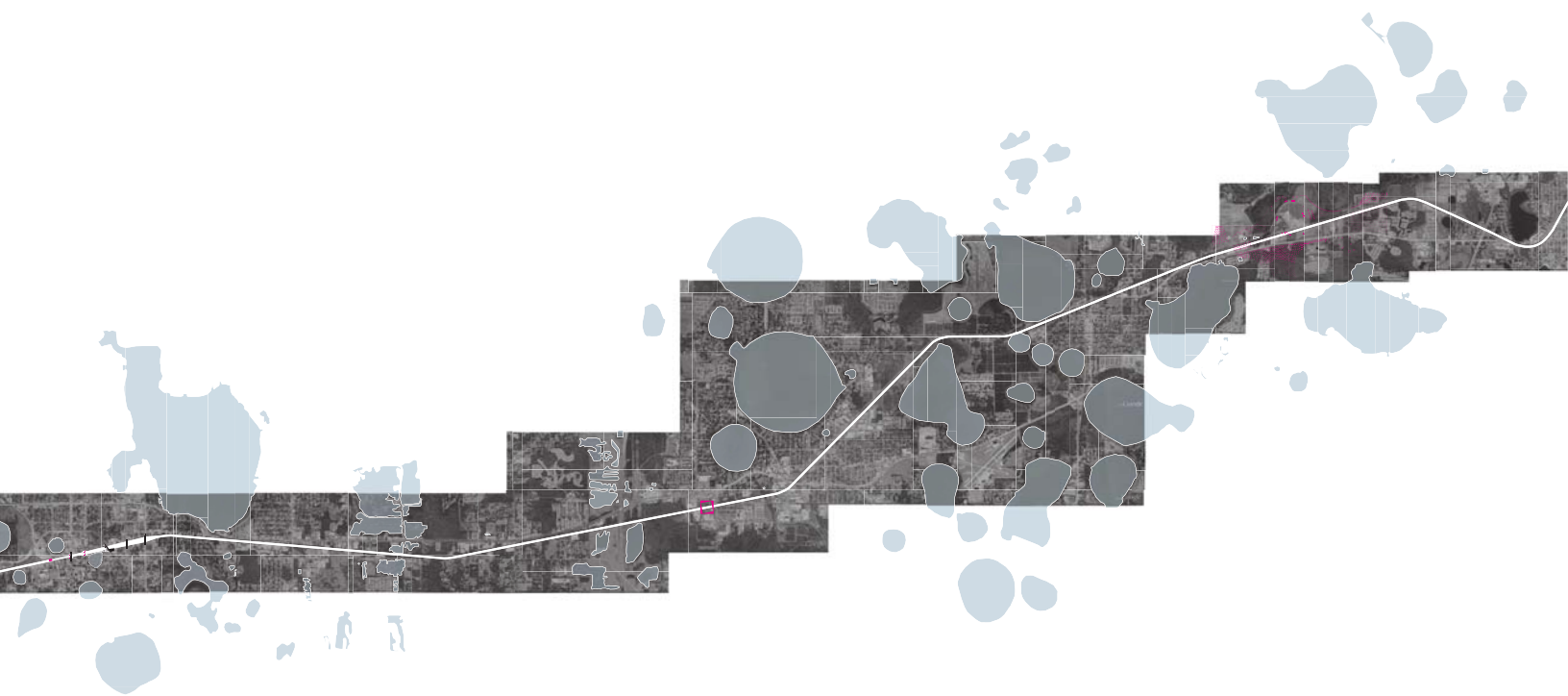
Their intersection with the high speed corridor requires readdressing how to occupy each object as new sites of civic collectivity.

The high speed rail line breaks the landscape even more than the highway does, creating uncross-able corridors. Such large deletions in the urban landscape require a means of bridging or tunneling for access. A new kind of public program is made by introducing large landform stitches, placing this collection of architectural objects in direct intersection with infrastructure.

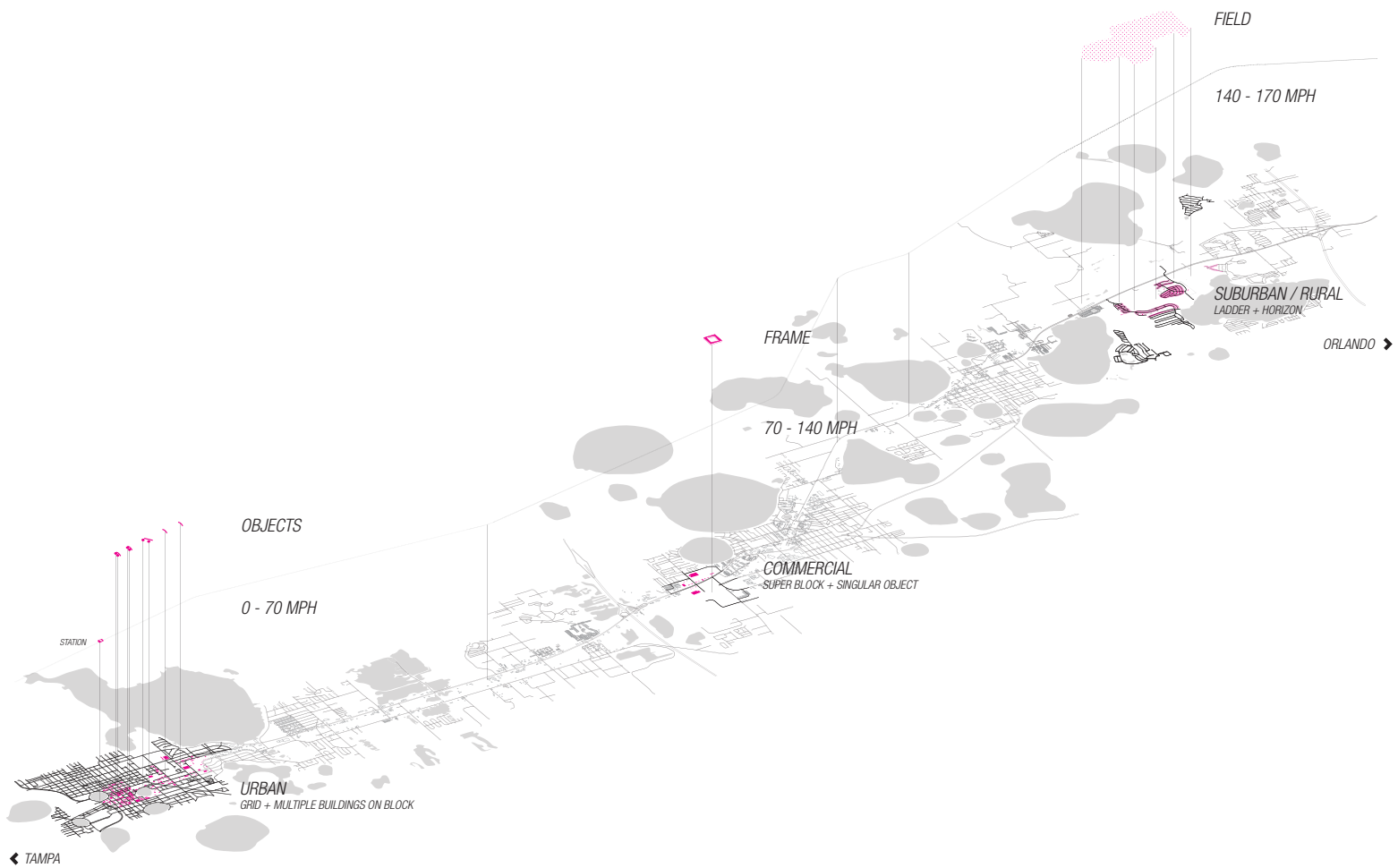
Each of these forms and programs operate as a re-framing of contemporary monumentality, exploring the definition of Monumental Object (additionally, the Monumental Grouping of Monumental Objects) and the Monumental Event Space. Serial objects operate as discrete forms existing in a specific corridor for activity; the frame as both object and event space; and the field as event space, where objects are integrated with the landscape

**Expanded Site** The high speed rail line connecting Tampa and Orlando, described by distance, stops, speed, and potential insertion points. Three different zones of urban development are identified and called out along the rail corridor, marking the landscape and acting as points of visual identification from the train.

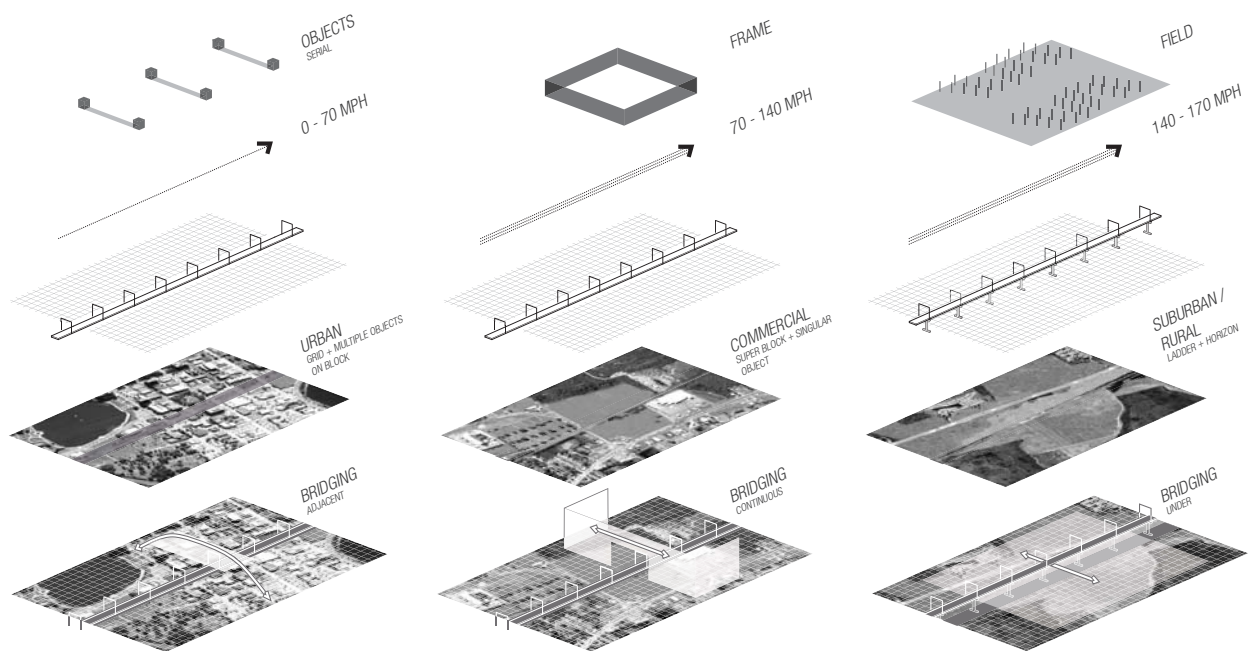




**27 miles east of Lakeland** *Objects, Frame, and Field become the new linear civic center, distributed along and intersecting with the infrastructure of the high speed rail. These exist as three insertions at differing speeds and differing urban conditions: slow / the gridded urban, fast / the super block commercial, and fastest / suburban - rural.*



**Expanded Site** Relationships between insertions, speed, and urban condition along the rail corridor, establishing a new typology of civic and performance center.



**Object, Frame, and Field** Expanded conditions separate speed, urban conditions, and integration of infrastructure

**Urban condition, Speed, and Program** Multiple scales of performance spaces are combined with commercial spaces to replace traditional municipal programming as the site of contemporary publicness. Program is organized by scale into small, large, and extra large, and is distributed according to urban conditions and speed.

URBAN CONDITION



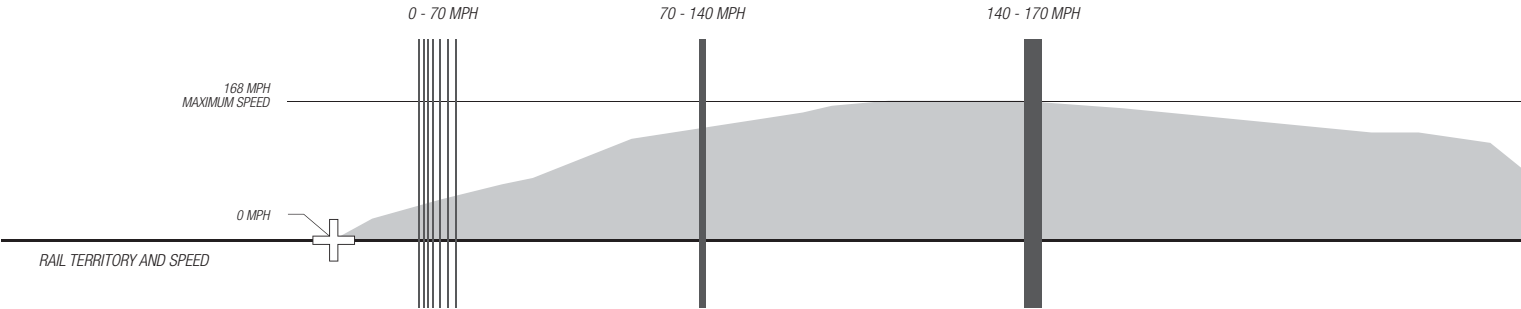
GRIDDED URBAN



SUPER BLOCK COMMERCIAL



SUBURBAN / RURAL LANDSCAPE



PROGRAM



SMALL  
1,000 PEOPLE



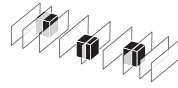
LARGE  
10,000 PEOPLE



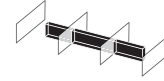
EXTRA LARGE  
75,000 PEOPLE



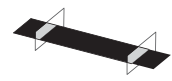




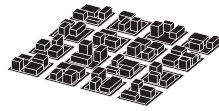
0 - 70 MPH



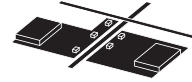
70 - 140 MPH



140 - 170 MPH



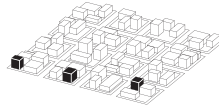
GRID + BUILT UP OBJECTS



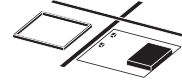
SUPER BLOCK + BOX STORE



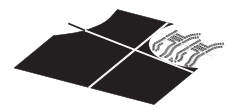
LADDER +  
RESIDENTIAL / AGRICULTURAL



FORM



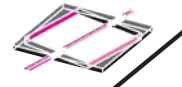
FORM



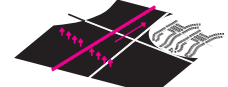
FORM



GROUPING



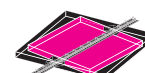
ALIGNMENT



VERTICAL AND HORIZONTAL  
ALIGNMENT



INTERIORITY



FRAMED CONDITION



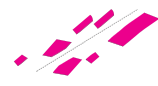
ENVELOPMENT



EMBEDDING



INTERNALIZED VOID



SURFACE MANIPULATION



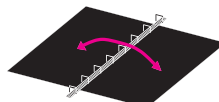
SERIAL



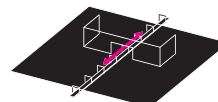
SINGULAR OBJECT



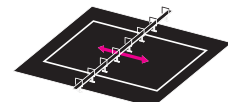
EXPANDED FIELD



BRIDGING



PENETRATION



BYPASS



PROGRAM



PROGRAM



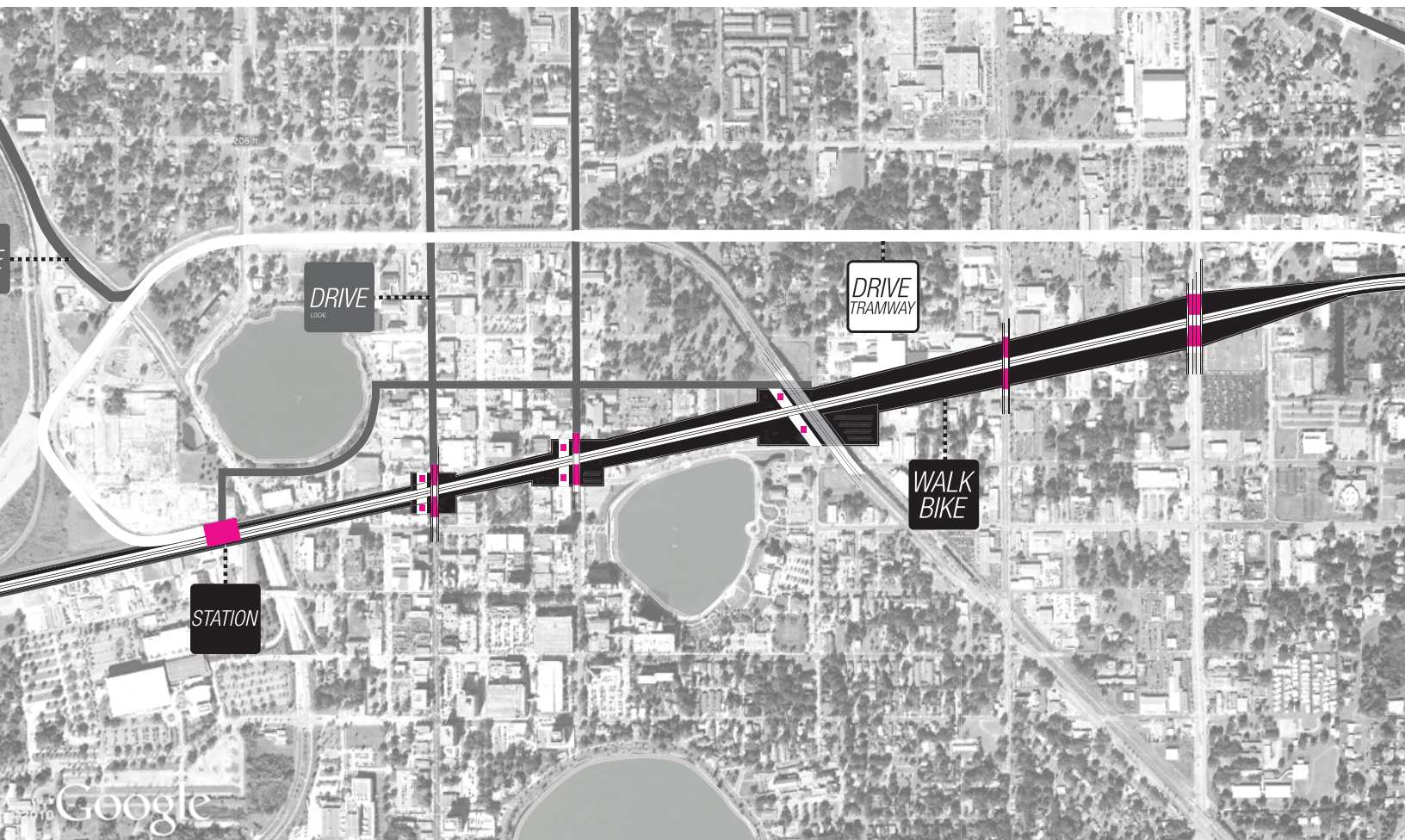
PROGRAM

**Objects, Frame, Field** A key was developed to compare the typological specificities between each insertion, ranging from from speed and duration to urban condition, to the programmatic diagram.



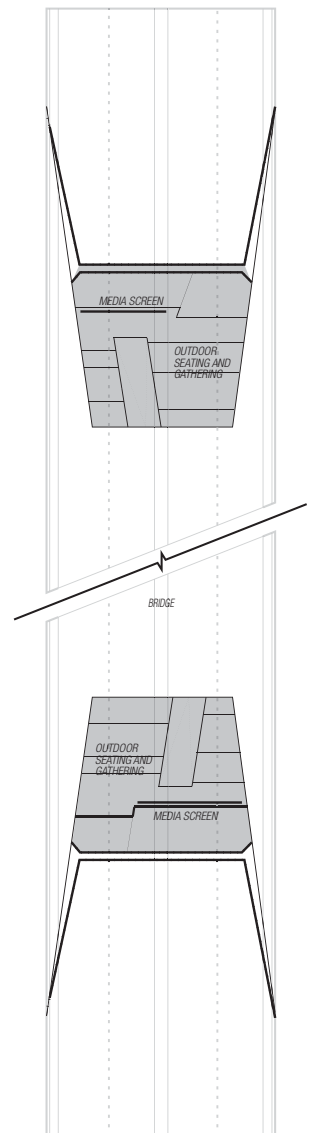
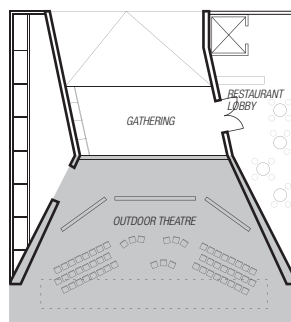
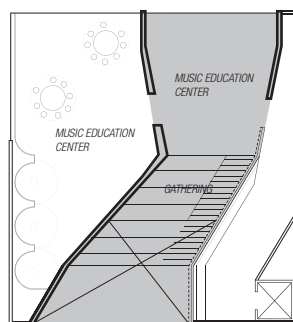
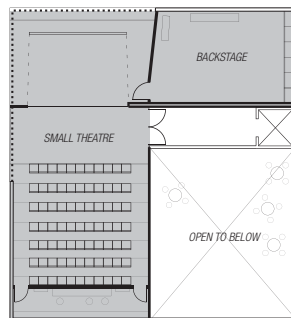
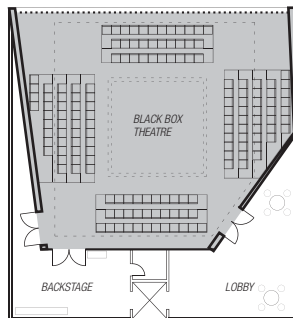
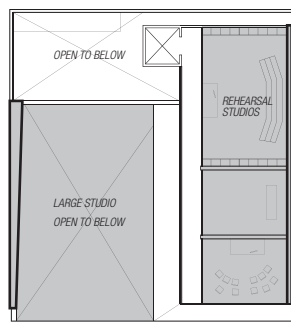
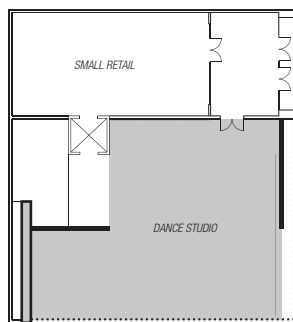
## OBJECTS

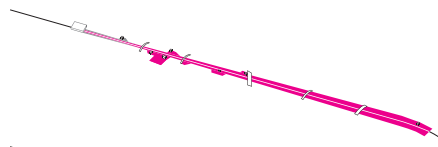
Serial objects are distributed in pairs along the high speed rail line within the urban grid, revealing a curated visual experience occurring as a repetitive set that exists as a new spatial typology existing along the corridor. Small scale performance (black box, small, and outdoor theatres) and rehearsal centers are complimented by commercial infill, connected along the high speed rail infrastructure by a pedestrian corridor. Bridging reconnects the urban grid broken by the placement of the rail. As sets of cubes, primary performance programs are differentiated from secondary commercial uses by the design of spatial and occupiable “apertures,” unique materiality, and punctures and openings in each envelope.



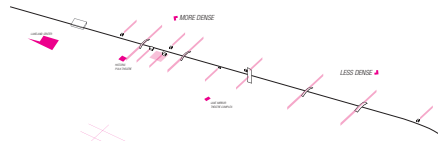


**Plans** Object plans differentiate between primary programs, as specific form, and secondary programs, occupying the interstitial space to the envelope.

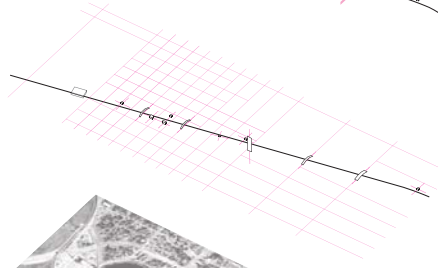




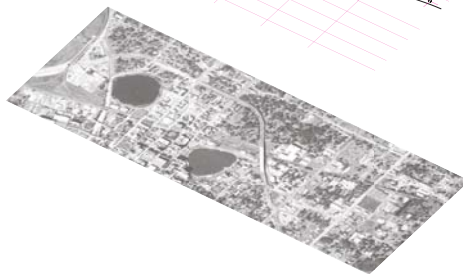
Corridor and visual compression



Density and rhythm

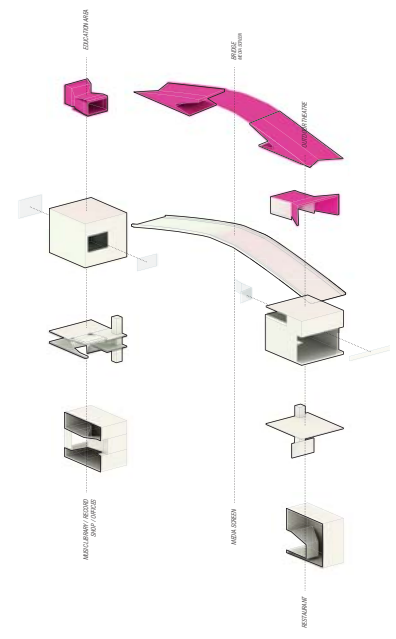
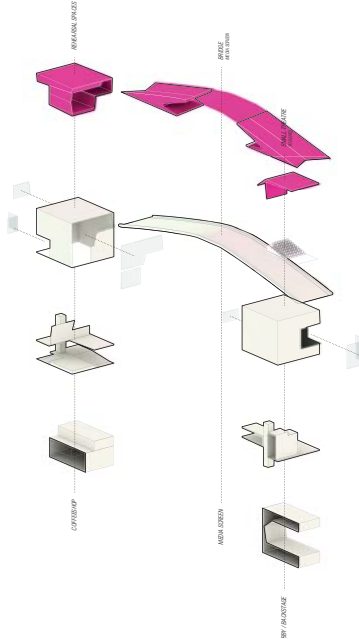
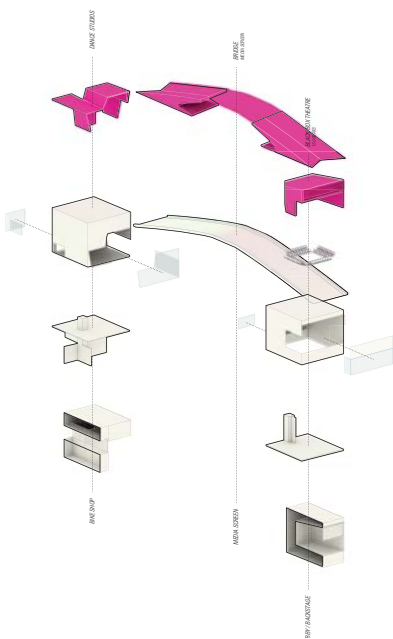


Discrete objects aligned with grid



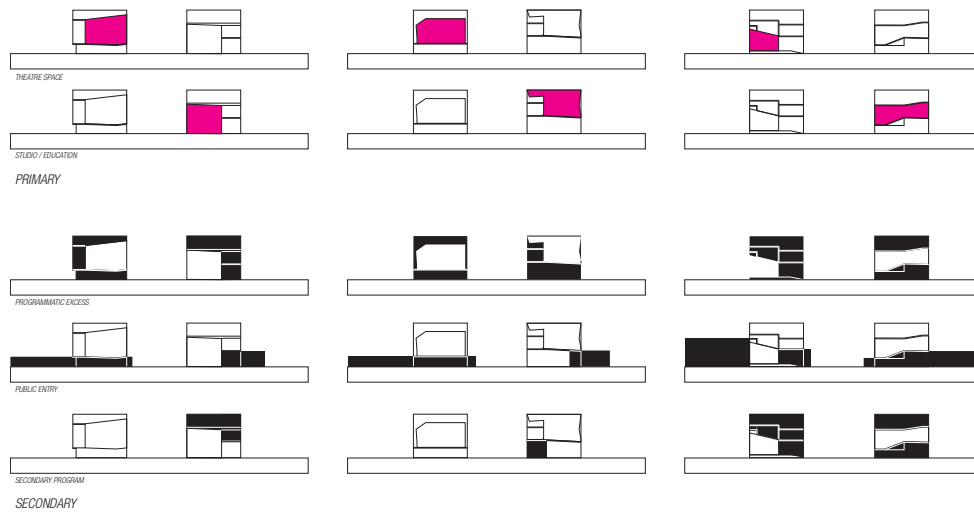
Gridded urban condition

**Urban Organization** The development of serial objects is a direct response to the urban grid, simple insertions mirroring the generic surrounding buildings, with formal complexity existing within the envelope. Distributed placement along and on both sides of the corridor creates specific densities and modulated rhythm, increasing towards the station. Bridging reconnects the two sides of the grid divided by high speed infrastructure, and an expanded pedestrian corridor runs adjacent to the objects' territory.

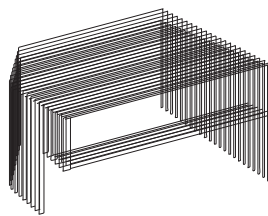


**Expanded Program, Form, and Envelope** Primary performance program occupies a content specific enclosure that acts as a visual aperture to direct and focus perspective from the train. Supporting program occupies the thickened space between performance and envelope.

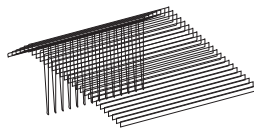




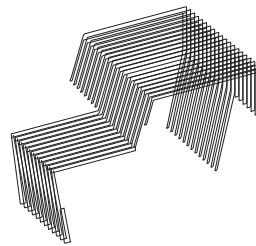
**Program and Use** Sectional relationship of performance enclosures and secondary infill to the exterior condition.



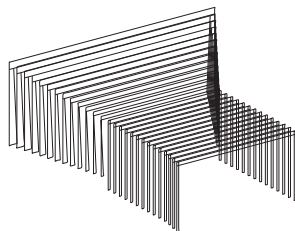
*Black Box Theatre*



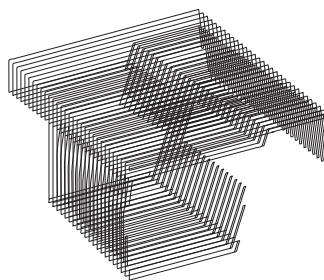
*Small Theatre*



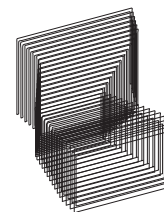
*Dance Studio*



*Outdoor Theatre*



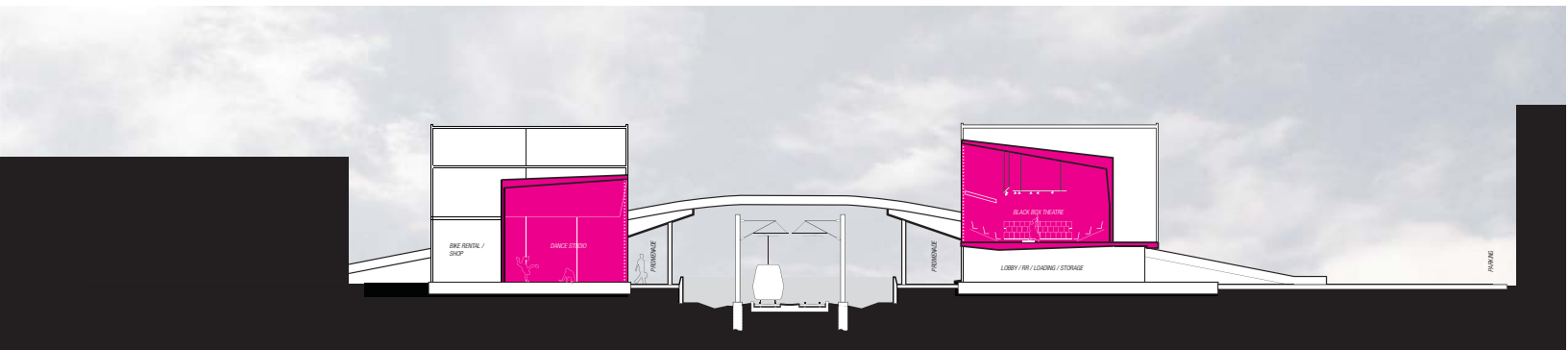
*Rehearsal Studios*



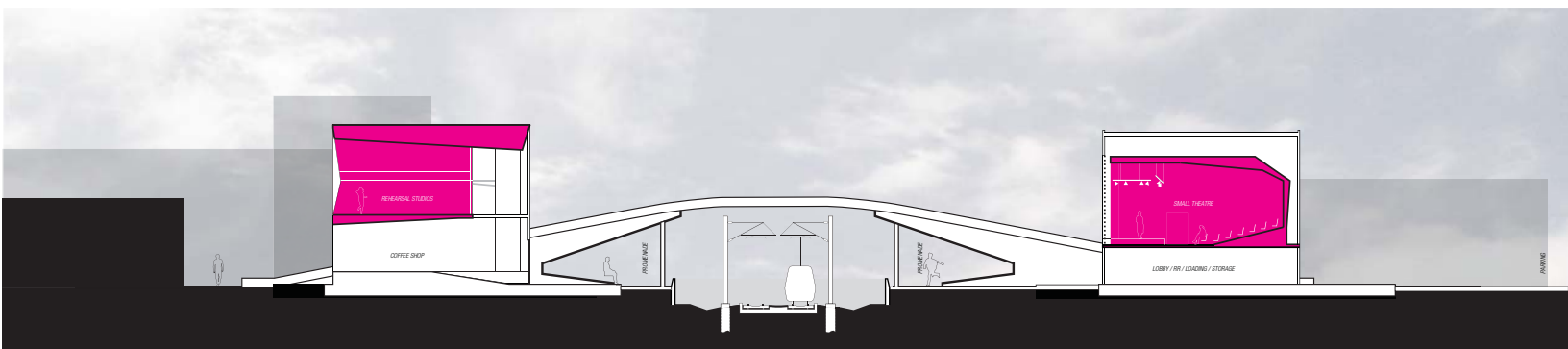
*Music Library*

**Dynamic Aperture, Generic Envelope** Formal expression for each of the primary programs existing with the envelope. Each acts as a means of directing the viewer to the type of activity within, creating a visual relationship across the rail corridor, rather than simply adjacent to it.

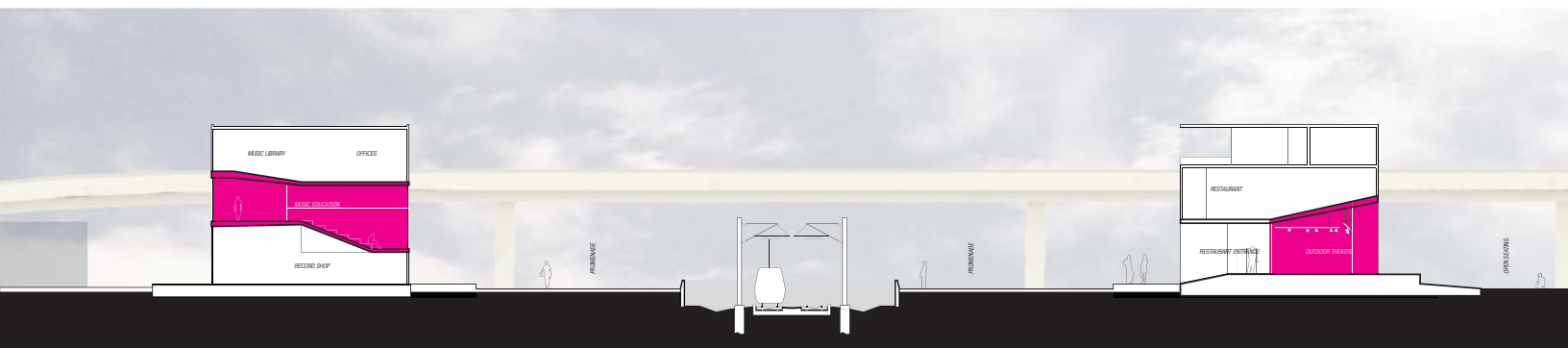
01 Dance Studio and Black Box Theatre

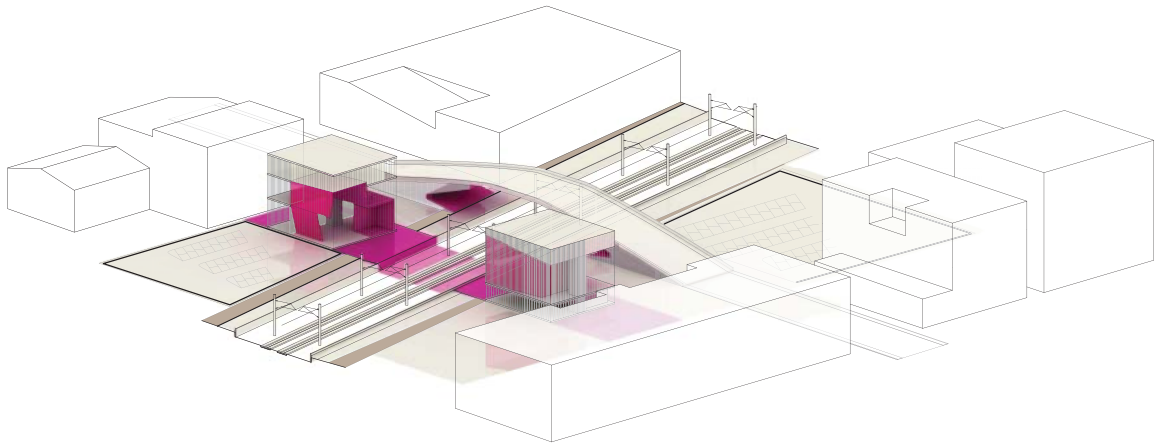


02 Vocal Rehearsal Studios and Small Theatre

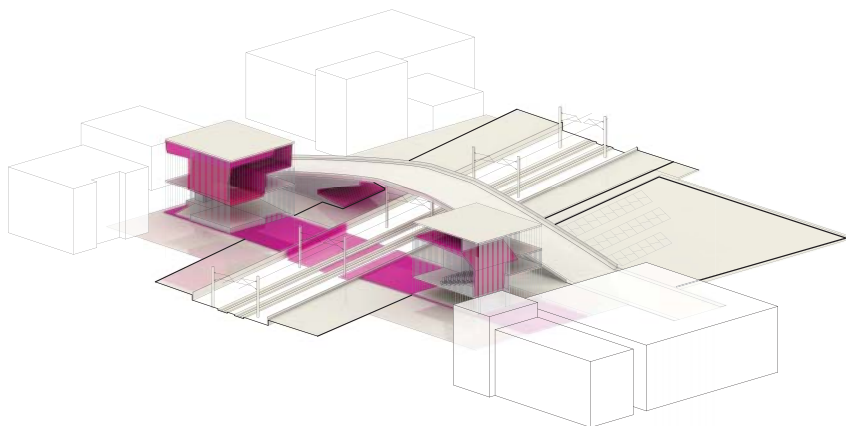


03 Education Center and Outdoor Theatre

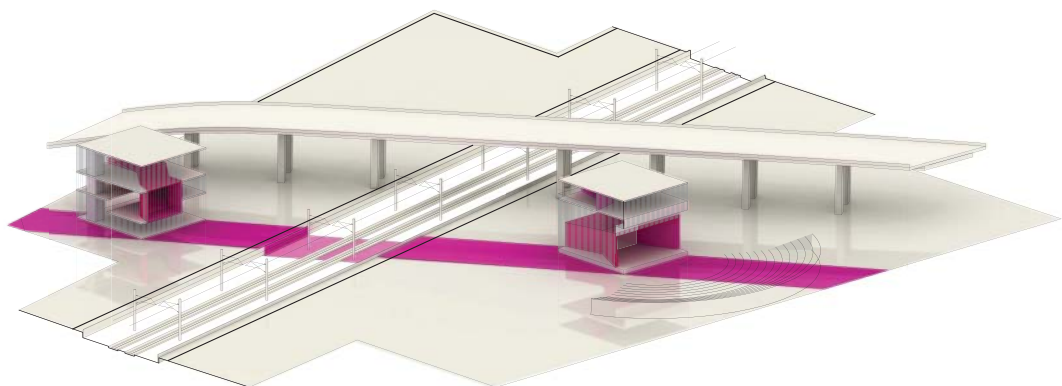




*01 Dance Studio and Black Box Theatre*



*02 Vocal Rehearsal Studios and Small Theatre*

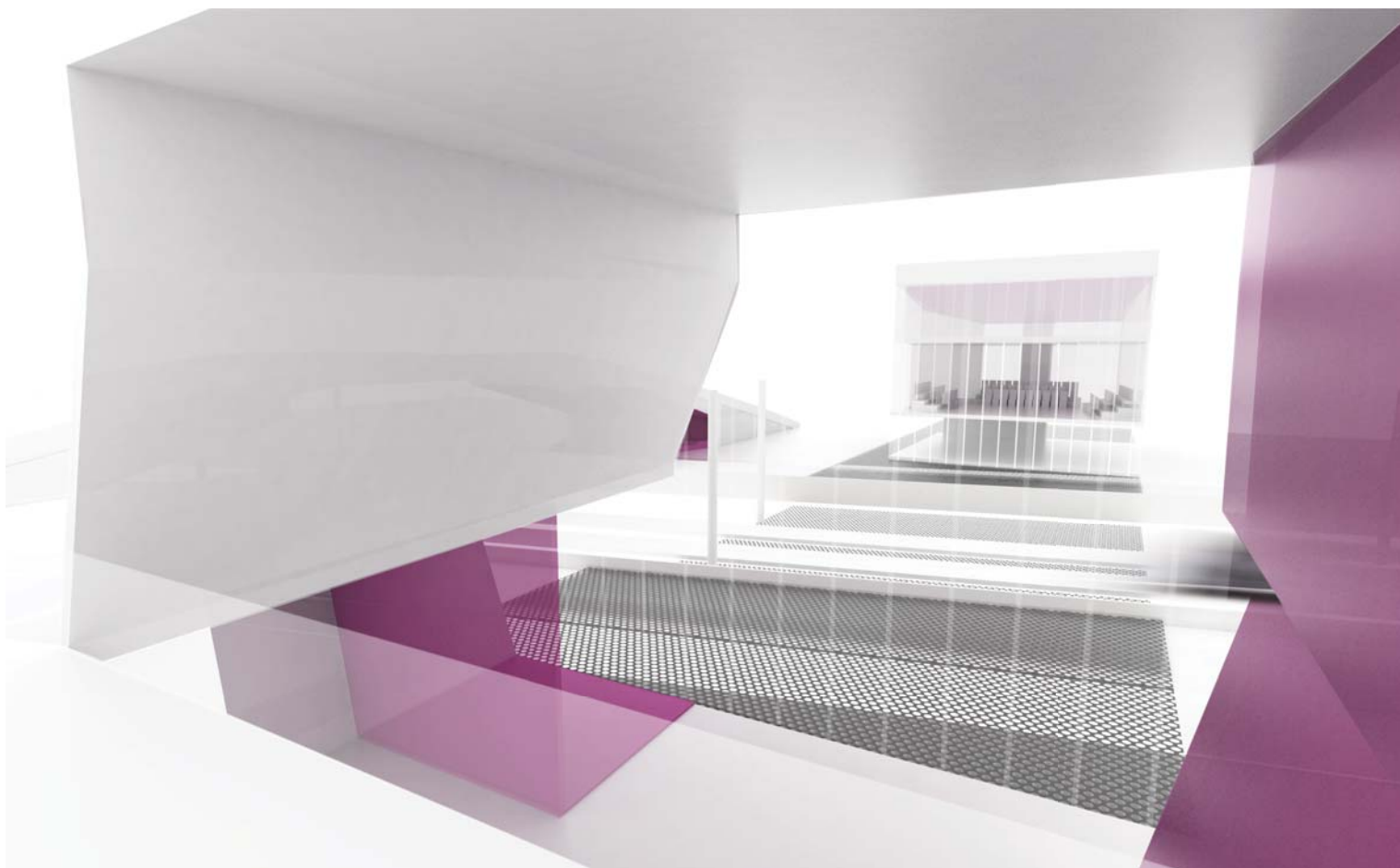


*03 Education Center and Outdoor Theatre*

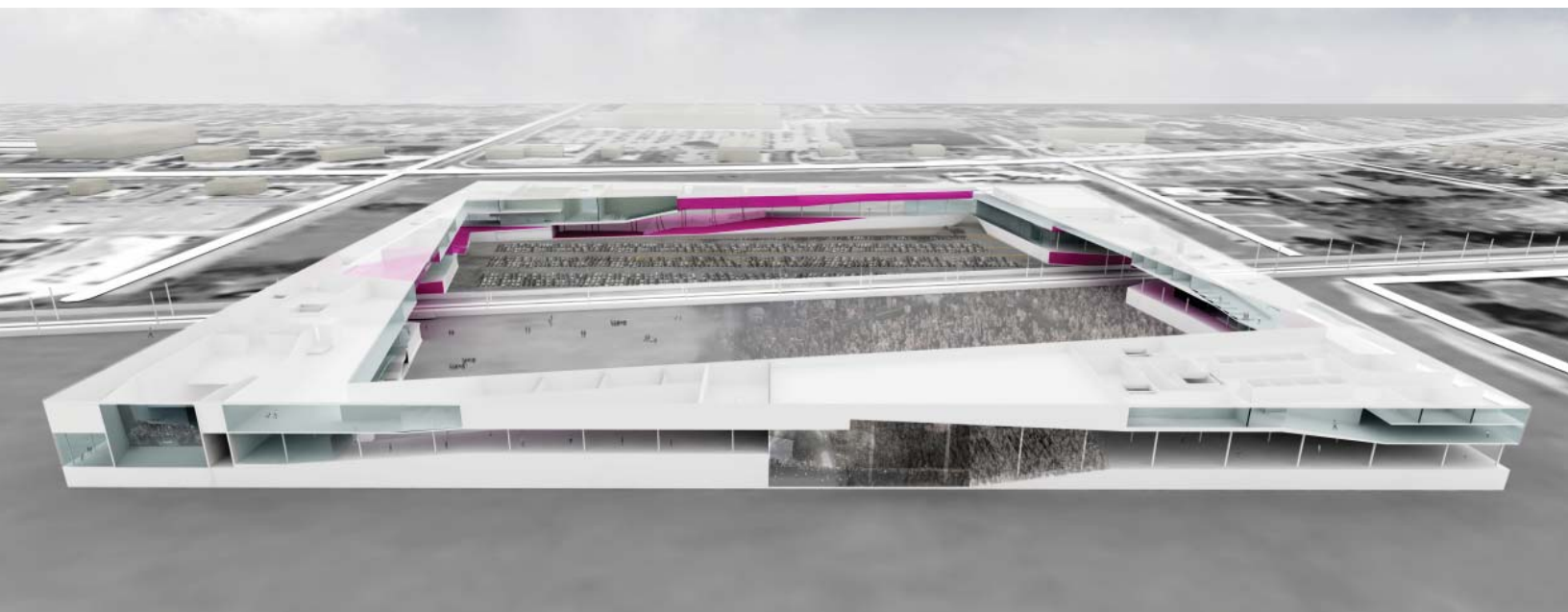
*Objects, downtown Lakeland Theatre (near) and dance studio (far) from the promenade, adjacent to the sunken high speed rail line.*



***Objects, downtown Lakeland** Spatial relationship between the interior of the theatre studio, to the black box theatre across the high speed rail line.*

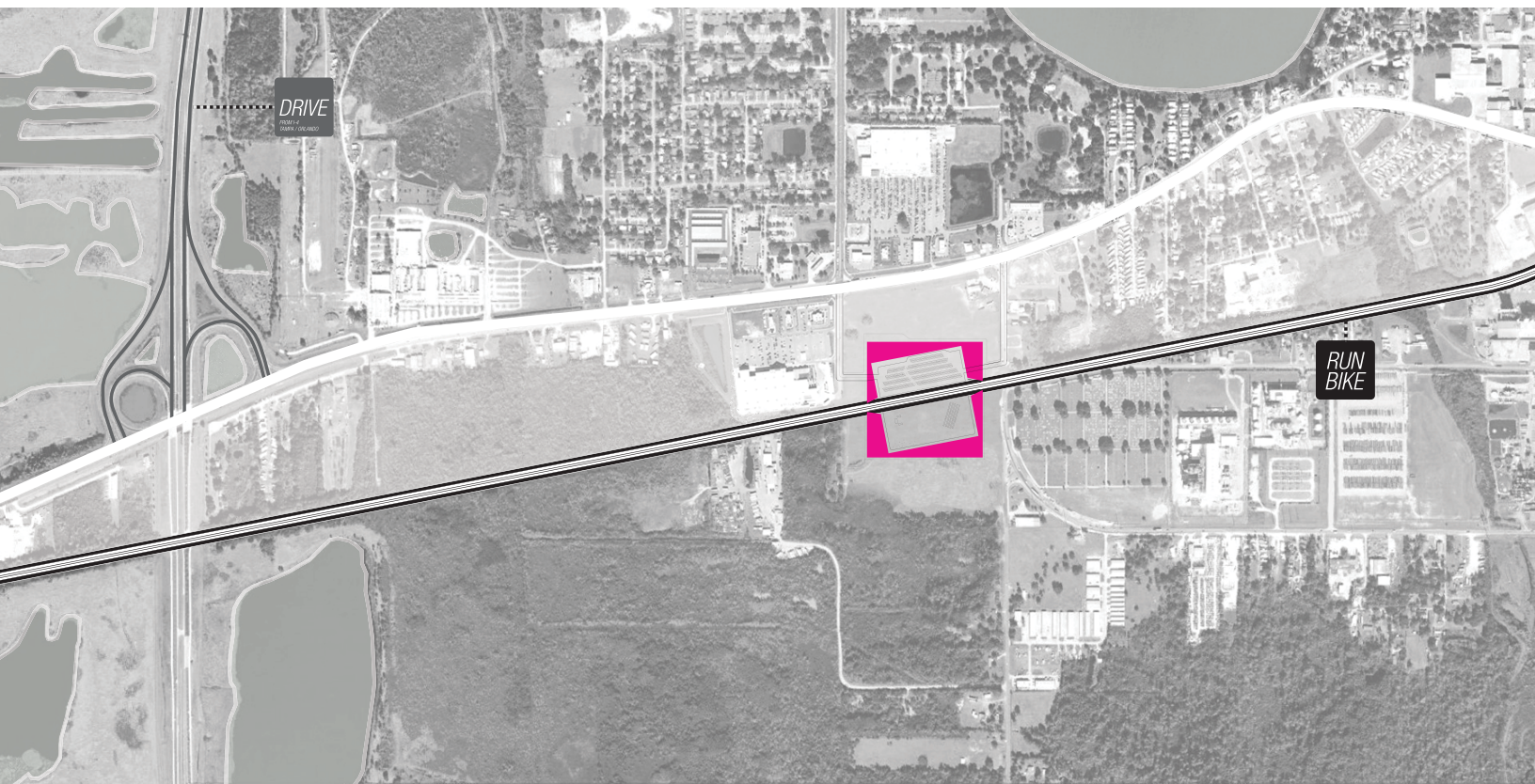


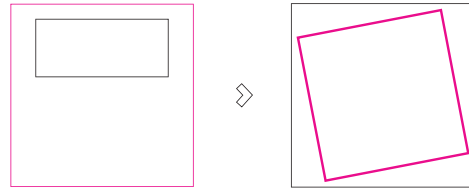




## FRAME

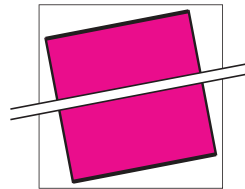
The frame inverts the traditional diagram of the box store / parking lot relationship to reveal a new typology that exists at the intersection of speed and the suburban landscape: space defined by the intersection of infrastructure and building in both plan and section. In the absence of traditional urban form, the plaza type is transformed in two manners: the frame, bounded form pierced by infrastructure, with an interior void as the first new plaza type, and the elevated plaza bound within the object itself that exists as a second urban microcosm, redefining the collective within a new monumental event space. It is a formal response to contemporary collectivity that acts as both object and platform for new forms of program to occur.





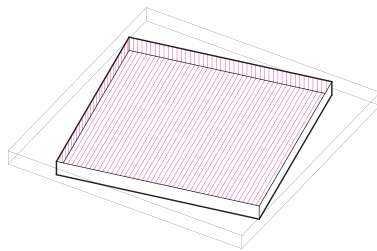
Box Store / Parking Lot  
Relationship

Framing and Internalization

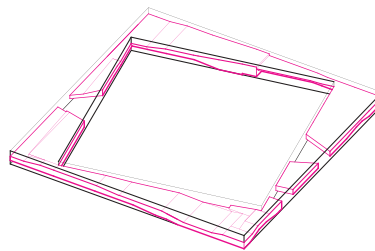


Framed Intersection at Rail

**Inverted Diagram** The inversion of the box store condition creates the opportunity for a new urban condition to exist at the intersection between the generic commercial area, high speed, and infrastructure.

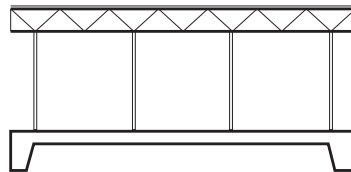


Interior Condition  
Bound Plaza, Internal Facade

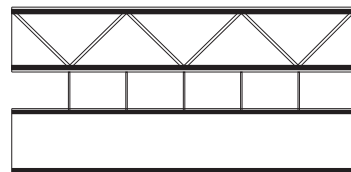


Internalized Condition  
Elevated Plaza, Performance and Circulation level

**Two Framed Conditions: Event Space** Framed and void conditions operate in both plan and section. The new framed void creates a platform for event, and an interior condition separate from the surrounding urban condition. The internalized void within the structure acts as a public avenue that runs throughout the entire frame, connecting large scale circulation with public and private event space.

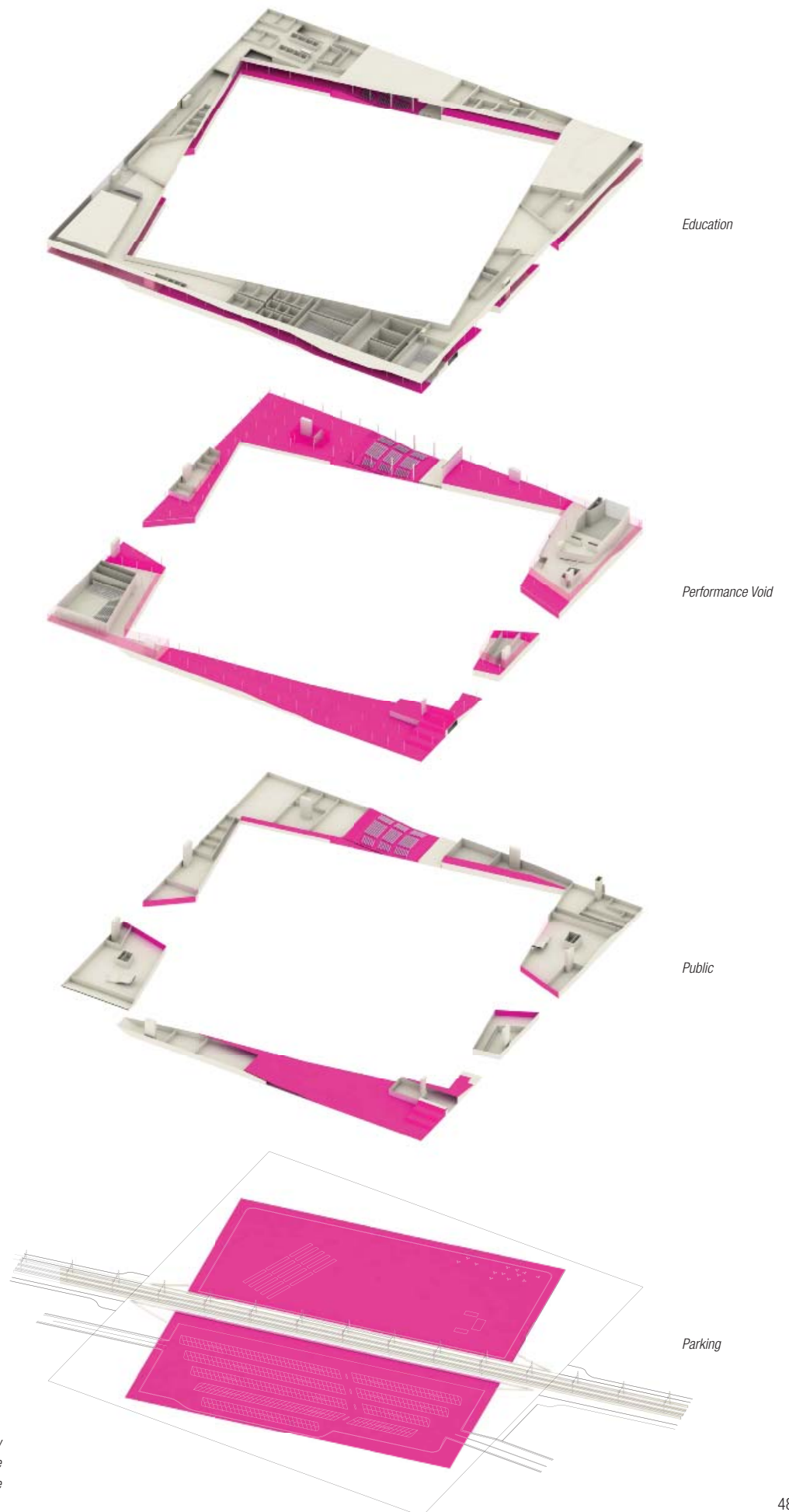


Typical Box Store Structure



Box Store Transformed

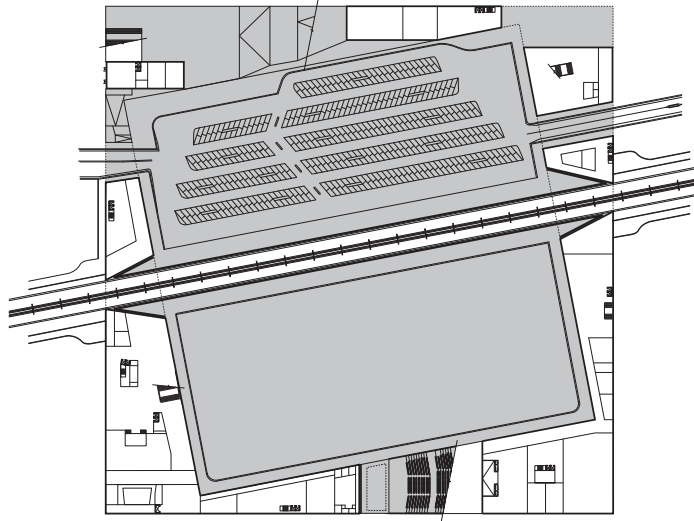
**Structural Transformation** The relationship between the inversion of the box store diagram is continued through to the structural diagram.



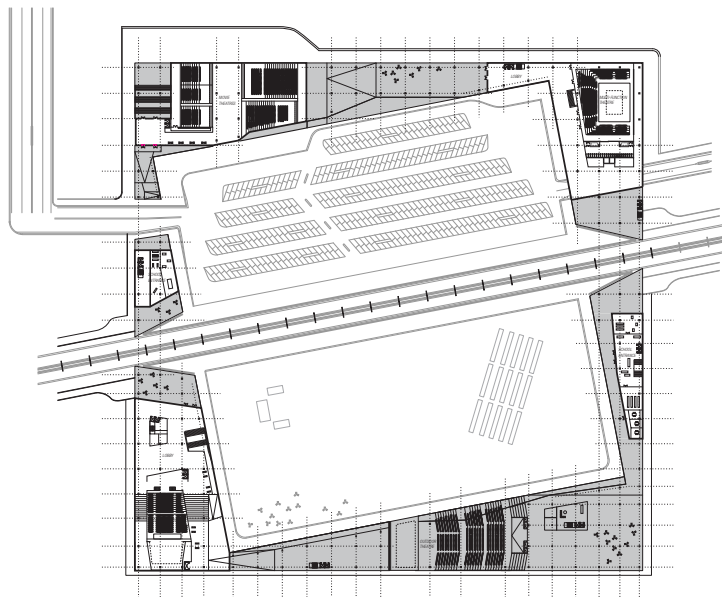
**Exploded Frame** The frame is organized in section by program, moving vertically from the most public to the most private spaces. Pink indicates public event space and circulation through the internalized void.



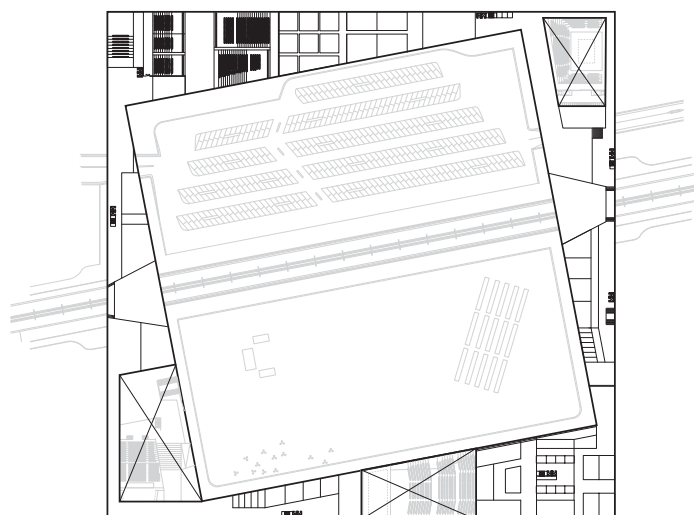
**Plans** Frame plans denote public collective space, and private retail, performance, and education space.



01 Retail, Public Entrance

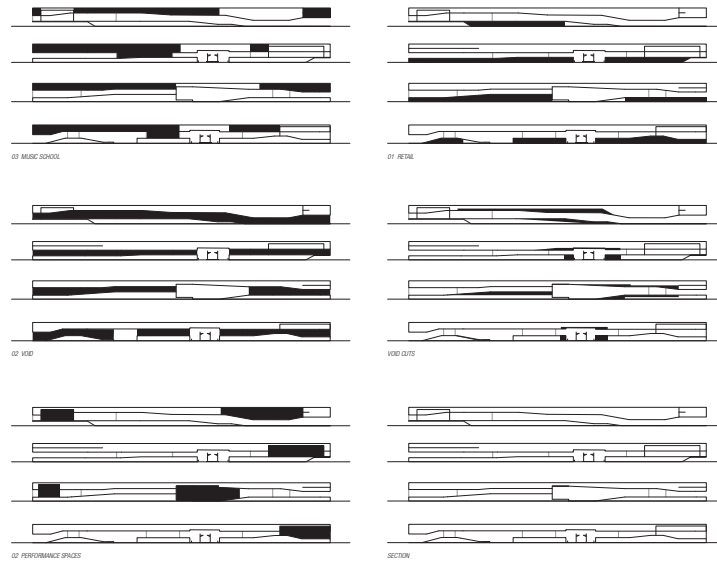


02 Performance and Void

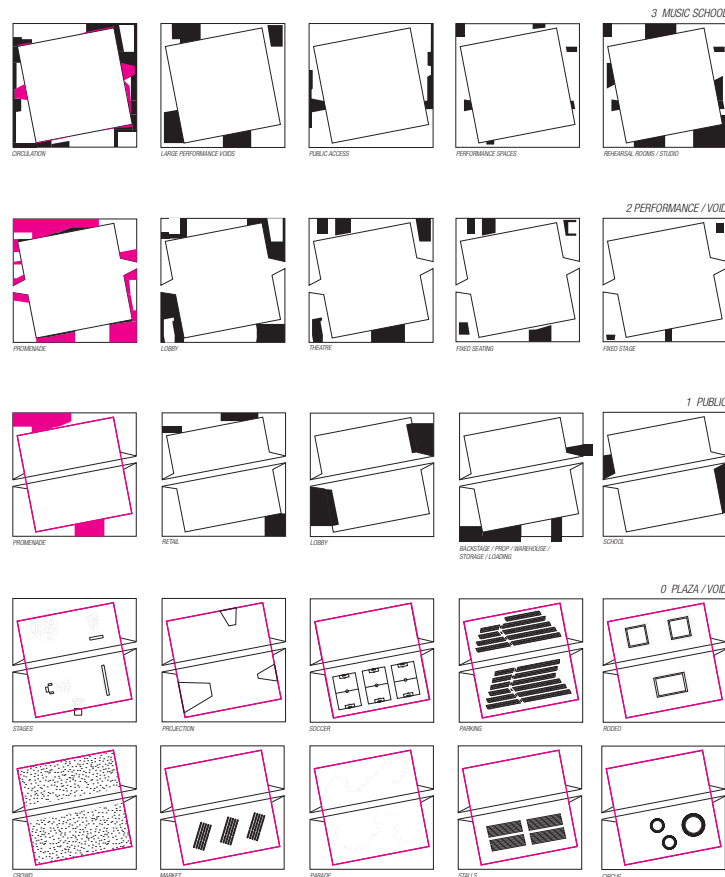


03 Music School



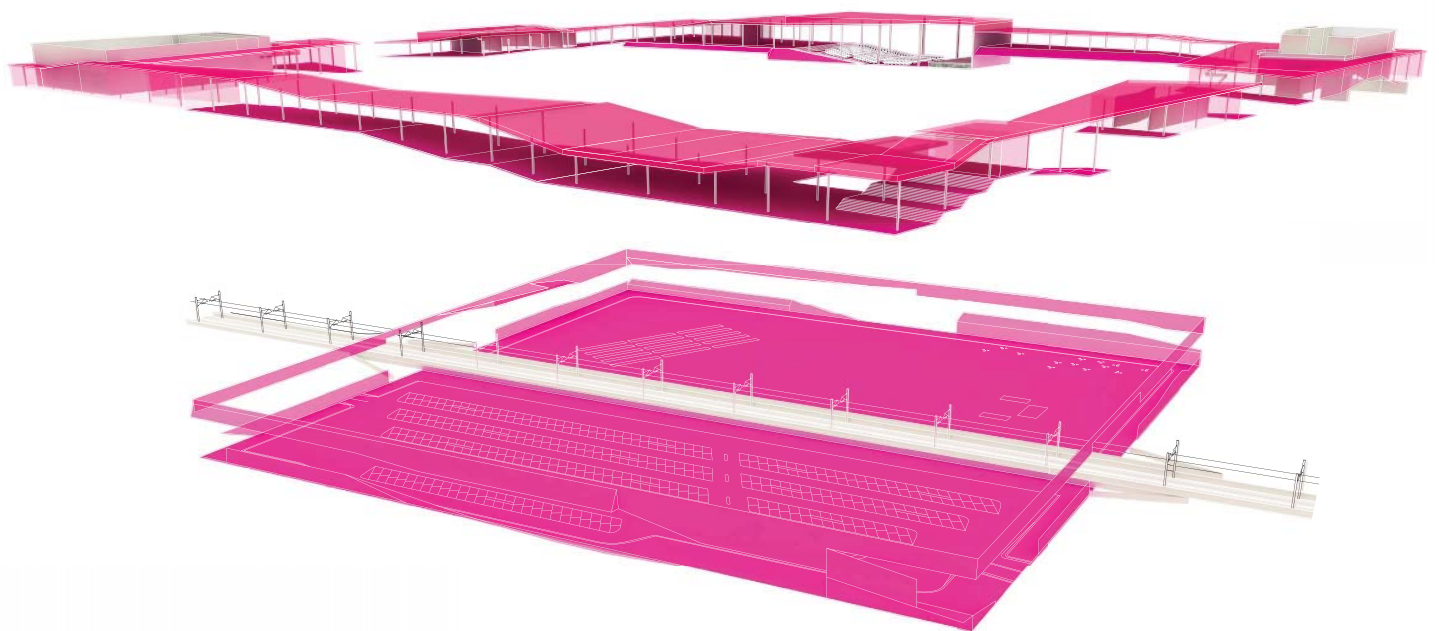


**Sectional and Programmatic Relationships** Program is organized in section, and follow undulating floor and ceiling plates along every side of the frame.



**Program and Use** Multiplicity of large scale uses in plan: Plaza Void, Public, Performance Void, and Music School

**Voids** Theatre (near) and dance studio (far) from the promenade, adjacent to the sunken high speed rail line.



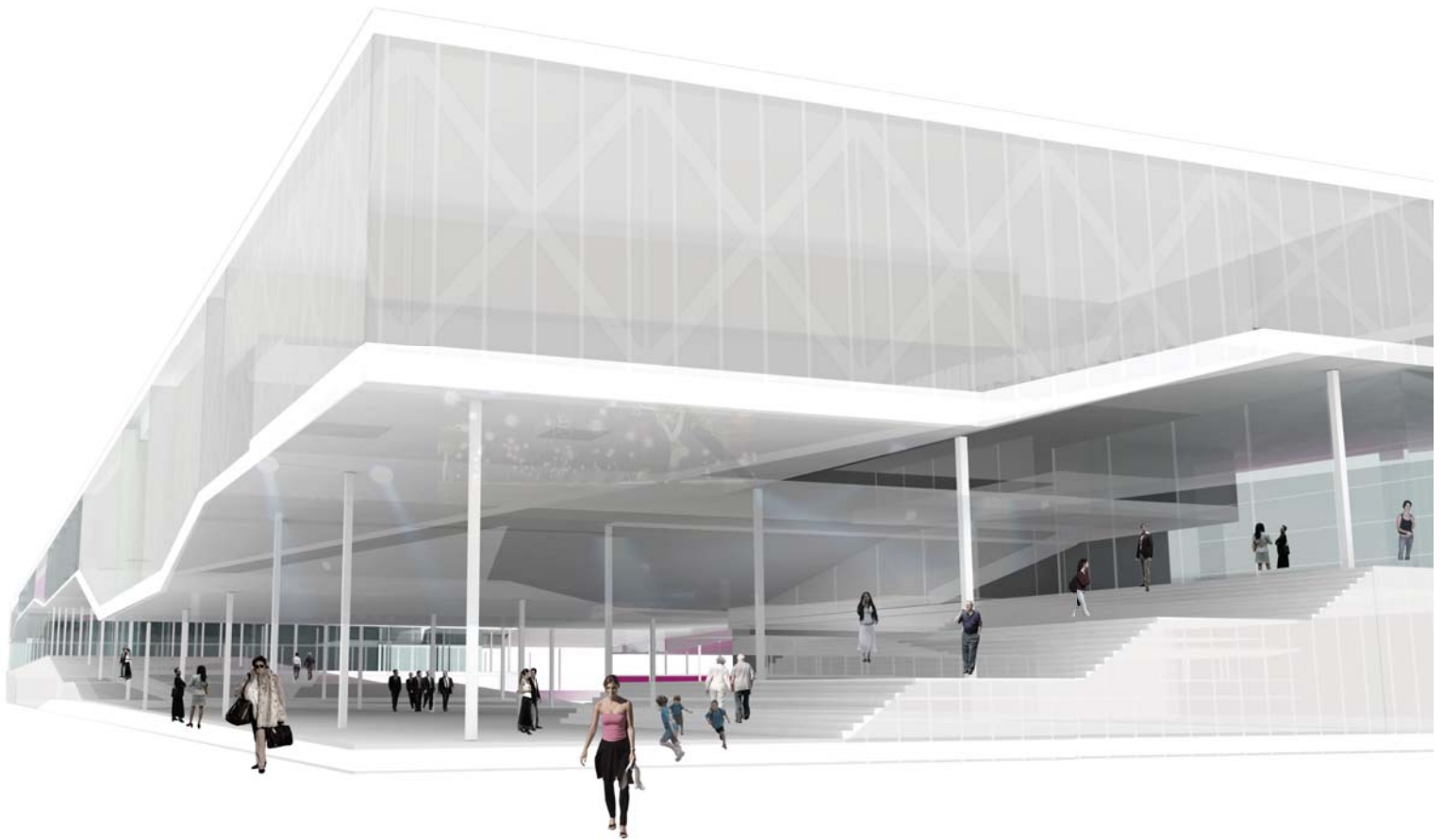
*Section, through High Speed Rail Line Theatre (near) and dance studio (far) from the promenade, adjacent to the sunken high speed rail line.*



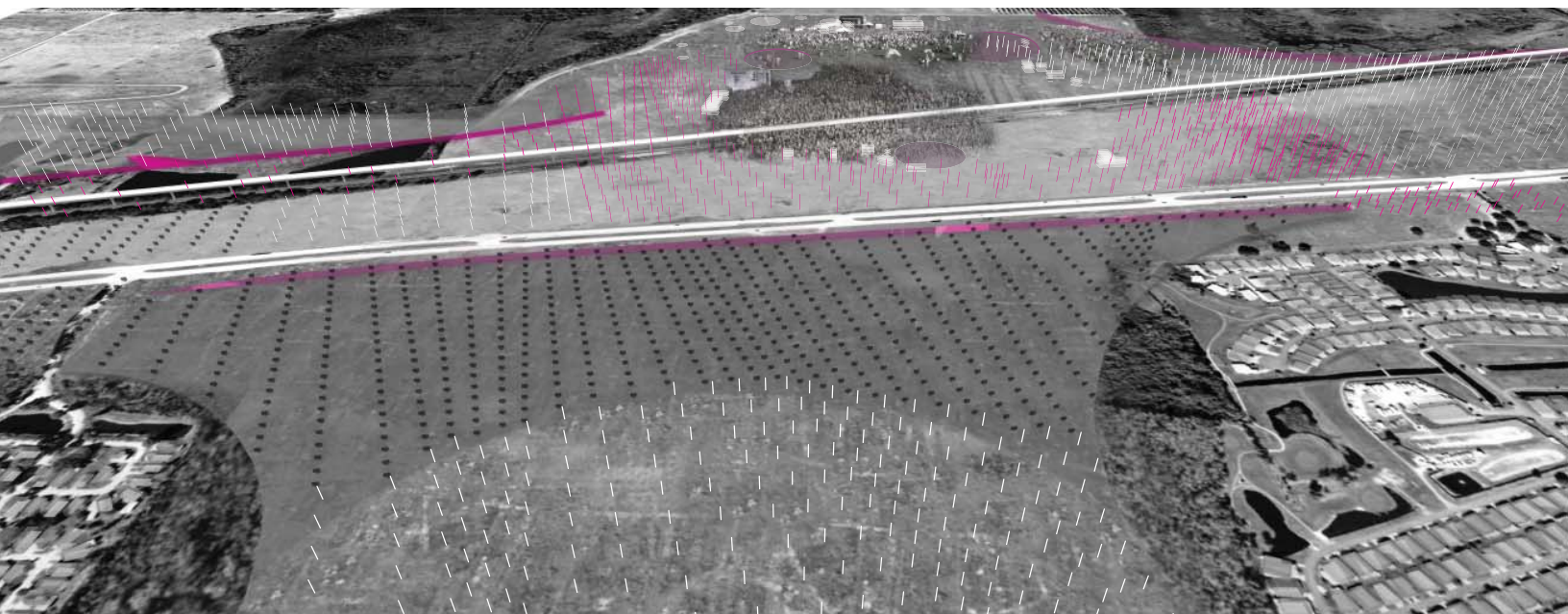
*Frame, Box Store Land* Within the frame exists a highly versatile void; a programmatically versatile platform for event space.



**Frame, Box Store Land** At the edge of the frame, an internalized void dips to the ground, a secondary space for event and program to spill over into the circulation system, defined by undulating floor plates and a forest of columns.

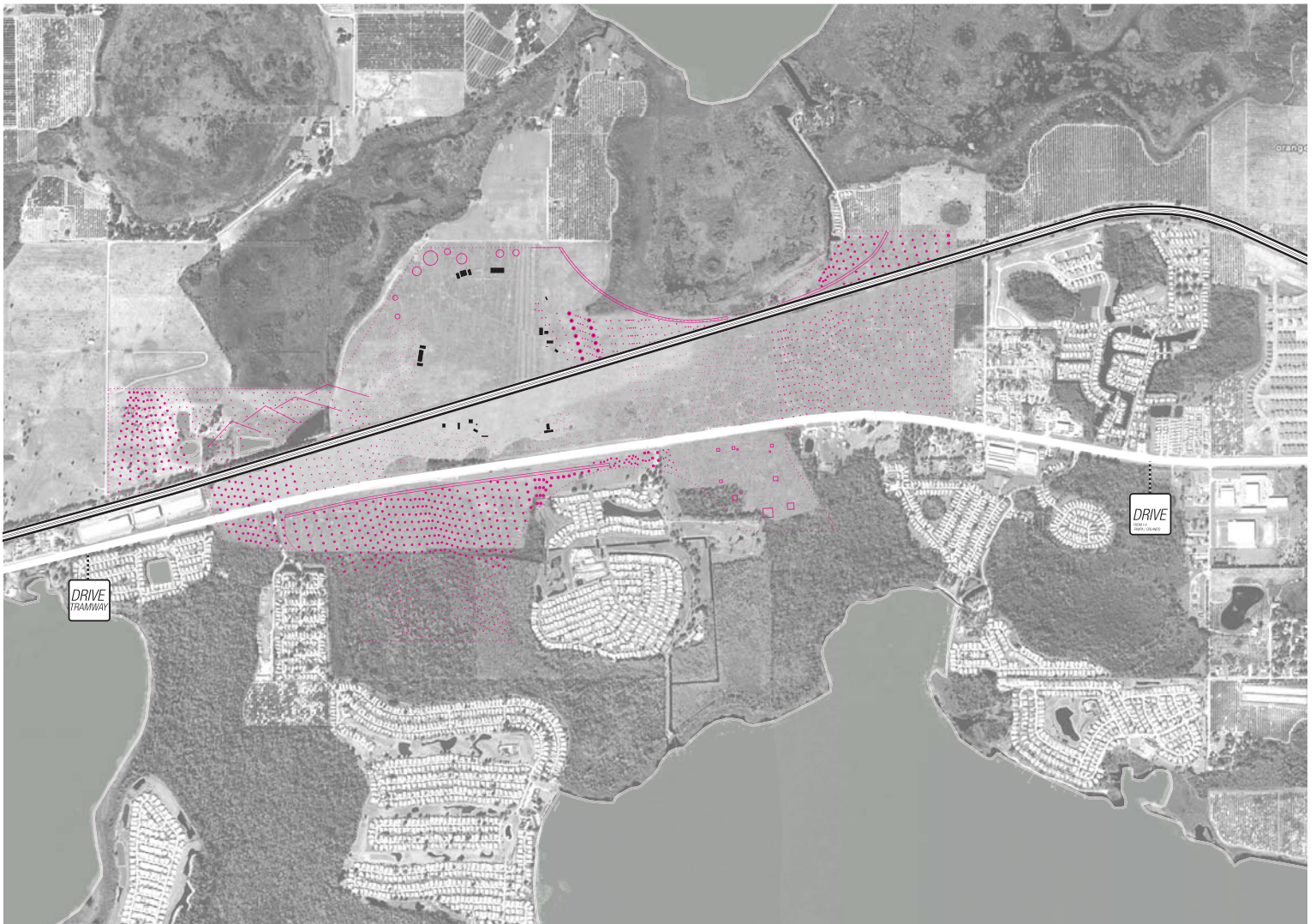




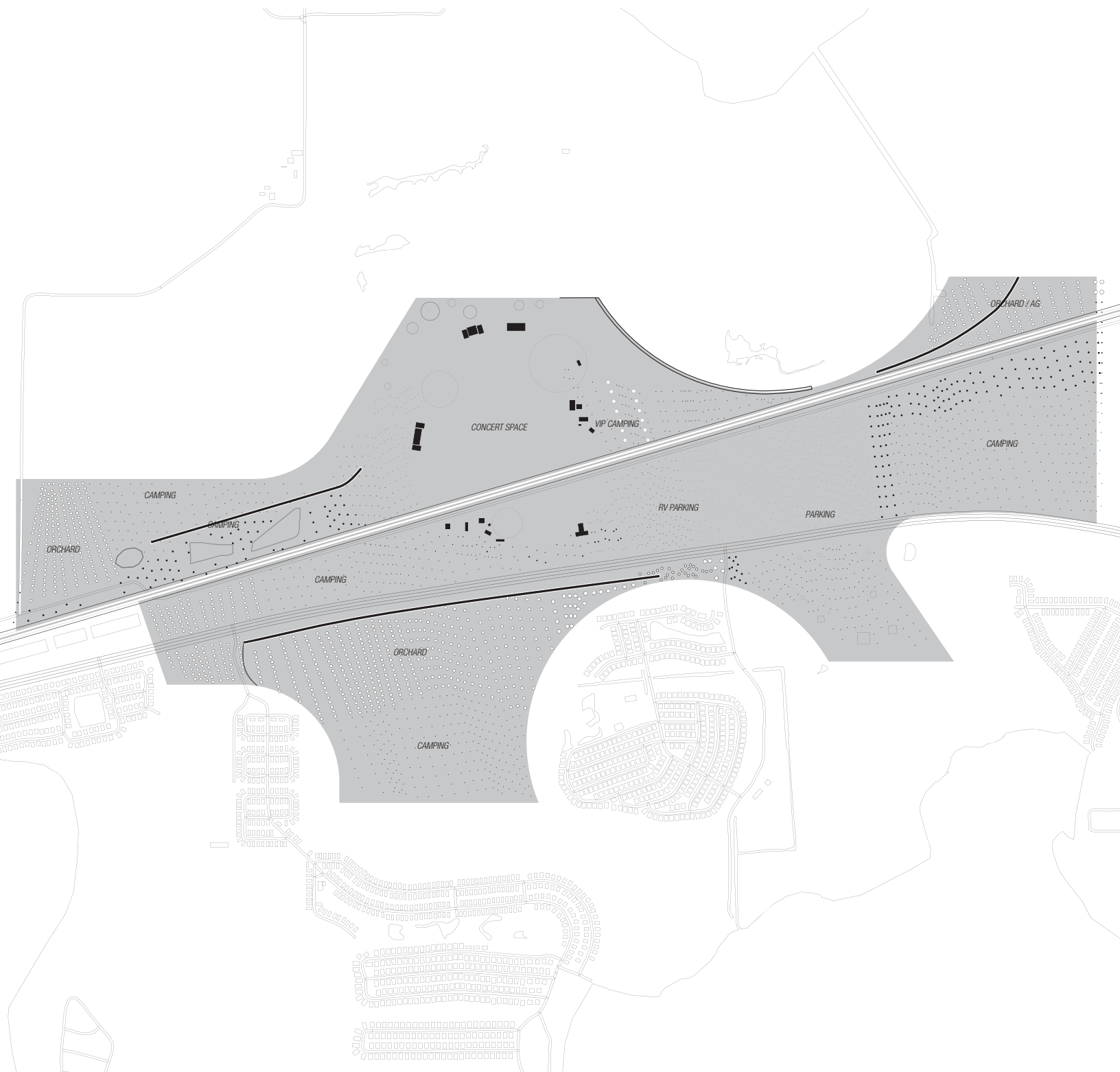


## FIELD

The field is experienced at the fastest speed, where the scale of building loses its legibility to blur. Horizontal and vertical extrusions mark the landscape, as ground becomes the platform for large scale event and agriculture programs, and vertical insertions create constantly shifting visual patterns and rhythms that mark rapidly bypassed space.

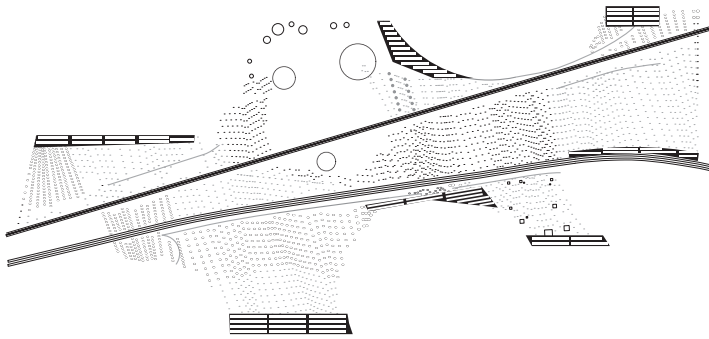


**Large Plan** Vertical and horizontal insertions across the site, creating a large scale field condition that operates in between landscape art installation and programmatically fluid event space.

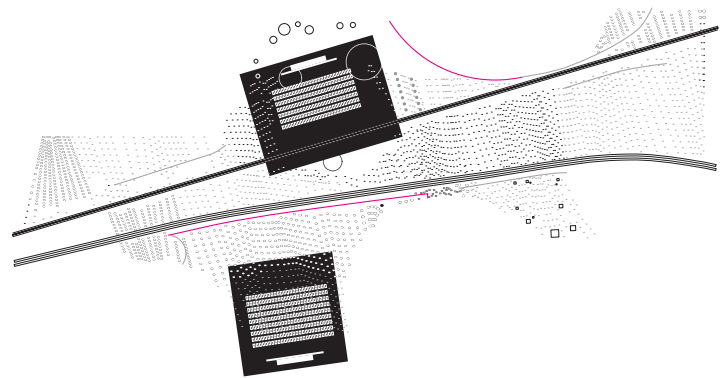




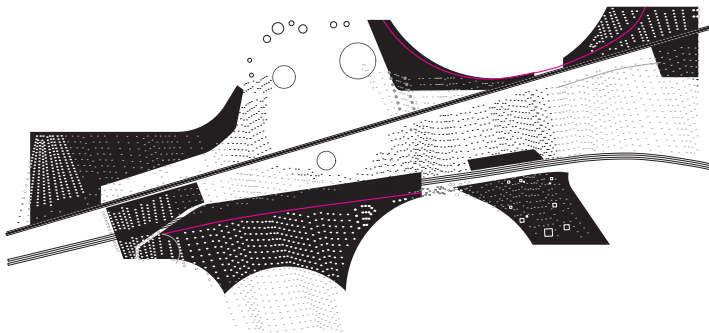
**Program and Use** Multiplicity of large scale uses exist in plan. Vertical insertions mark the ground, providing an outline of programmatic content, but the fluidity and transitory nature of the area is key for the large scale site. Varying programmatic uses are temporal and shift depending on event, occupation, and density.



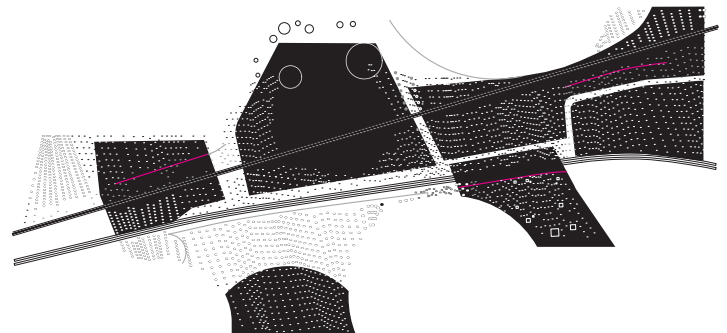
Solar Panels



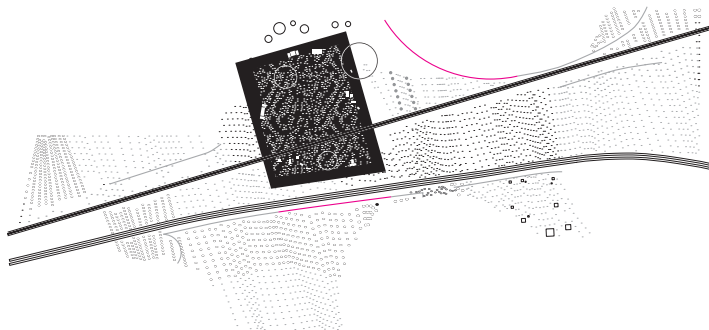
Movie Drive In



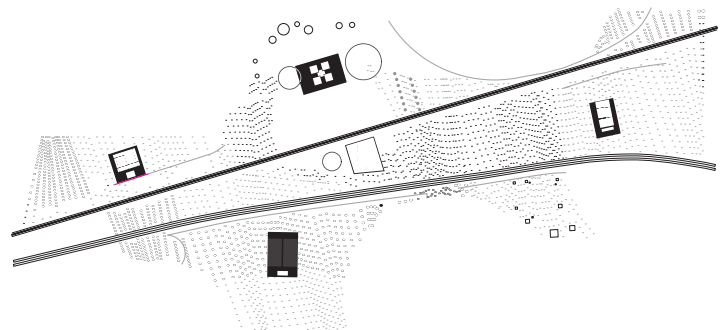
Total Orchard



Large Camping Site



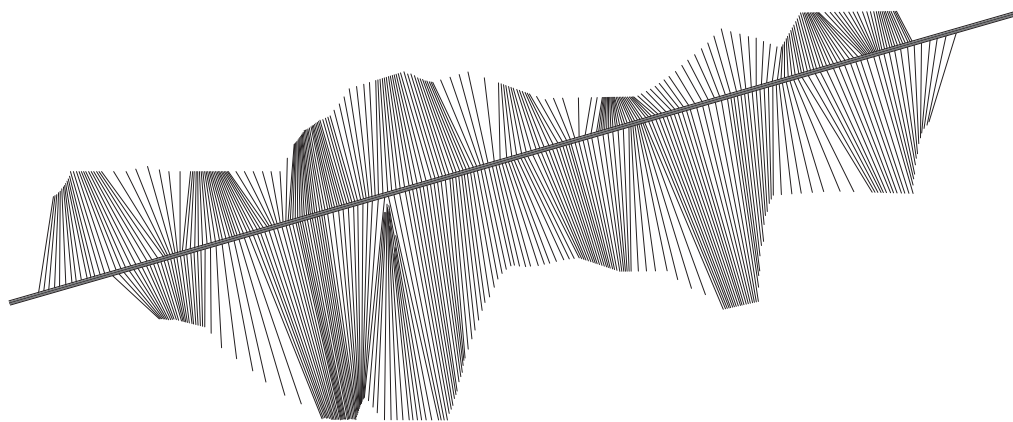
Large Concerts



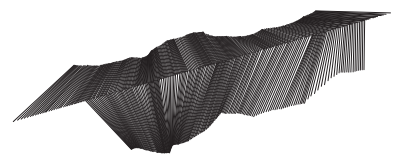
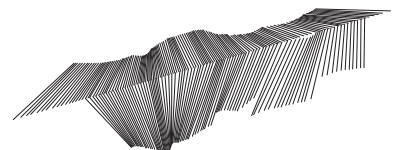
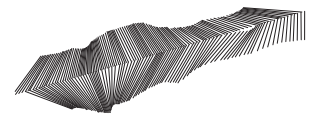
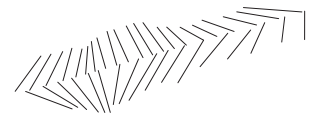
Small Concerts

**Marked Territory and Increased Density**

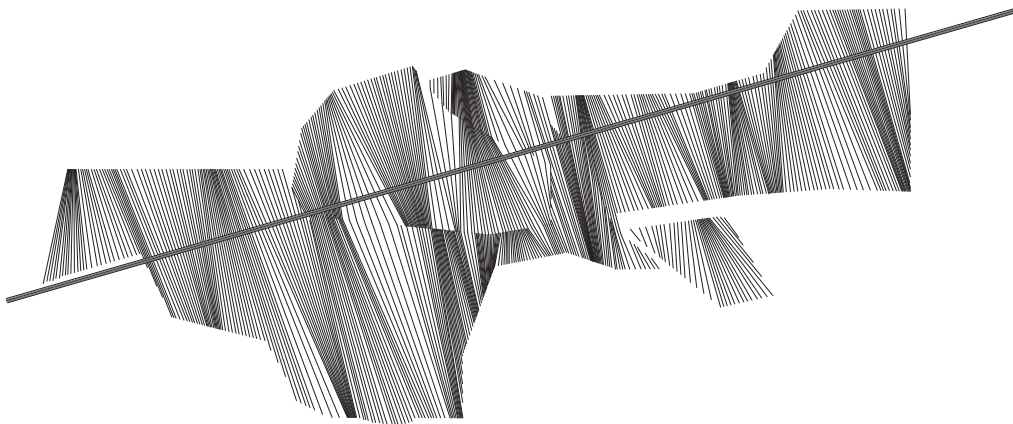
Vertical markers create a constantly shifting and dynamic landscape to passengers moving by at speeds up to 170 mph.



*Aperture specific to rail line*



*Densification*

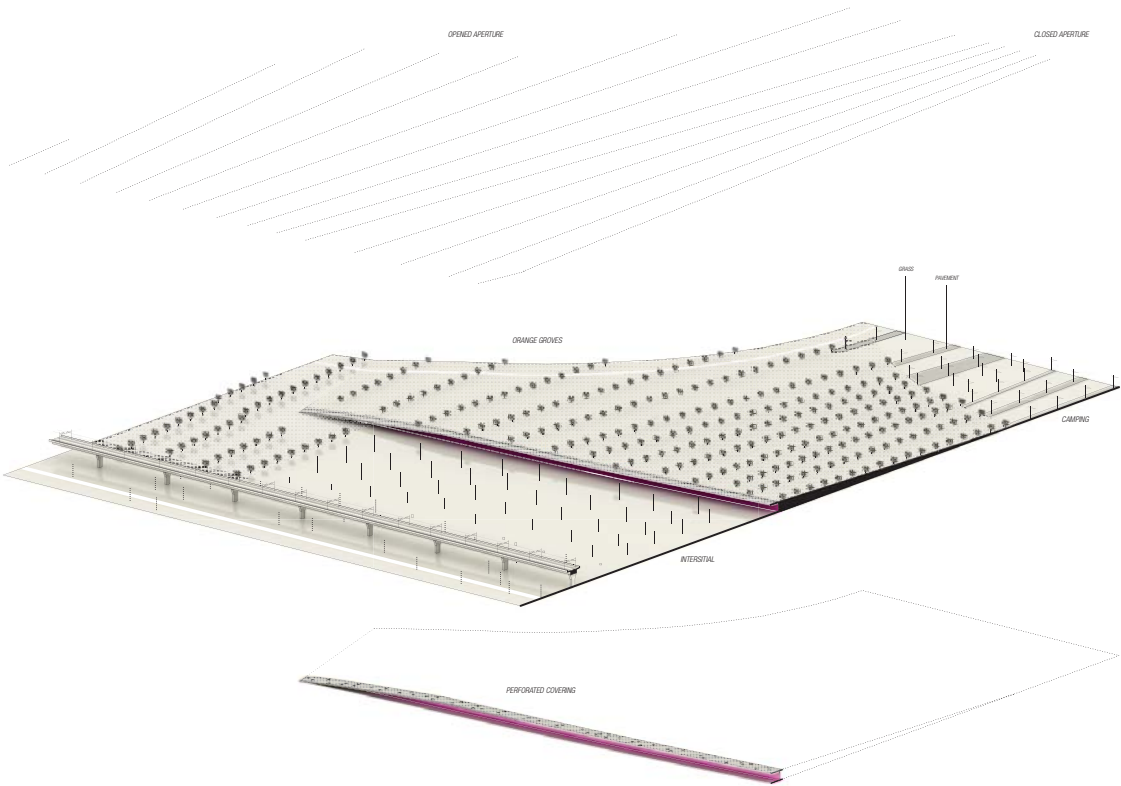


*Aperture specific to program area*

**Intensified Apertures, Panoramic Points**



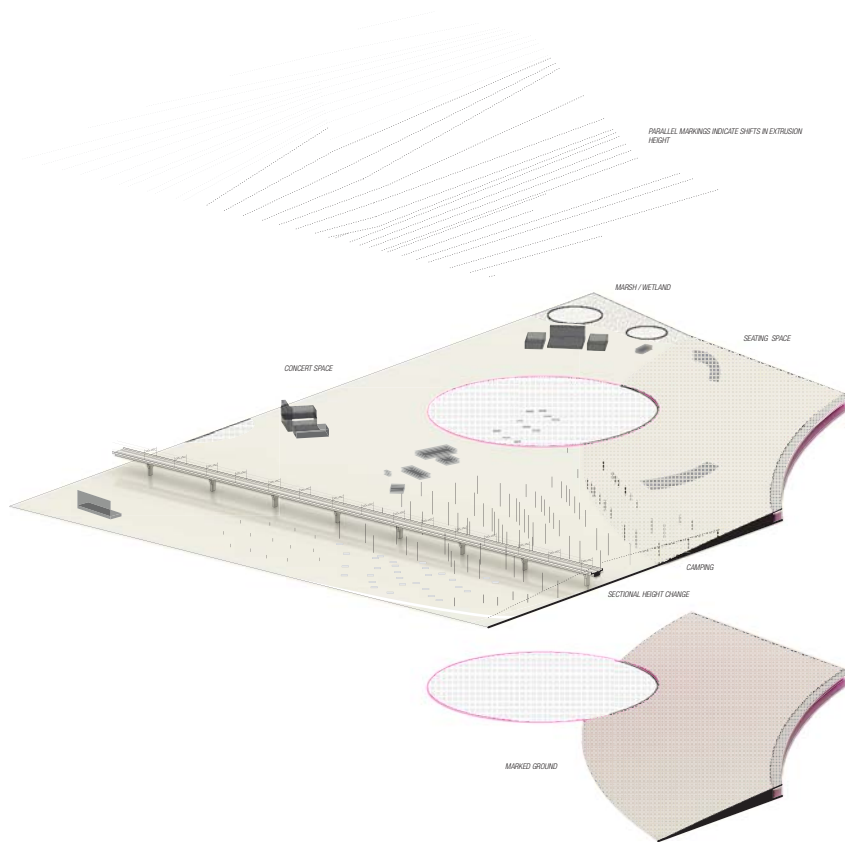
Camping, Orchards, Interstitial



Vertical: Marked Territory  
Pattern of extrusion for visual patterning

Rail Bypass

Horizontal: Ground Manipulation  
Insertion of voids for gathering /  
program view from rail



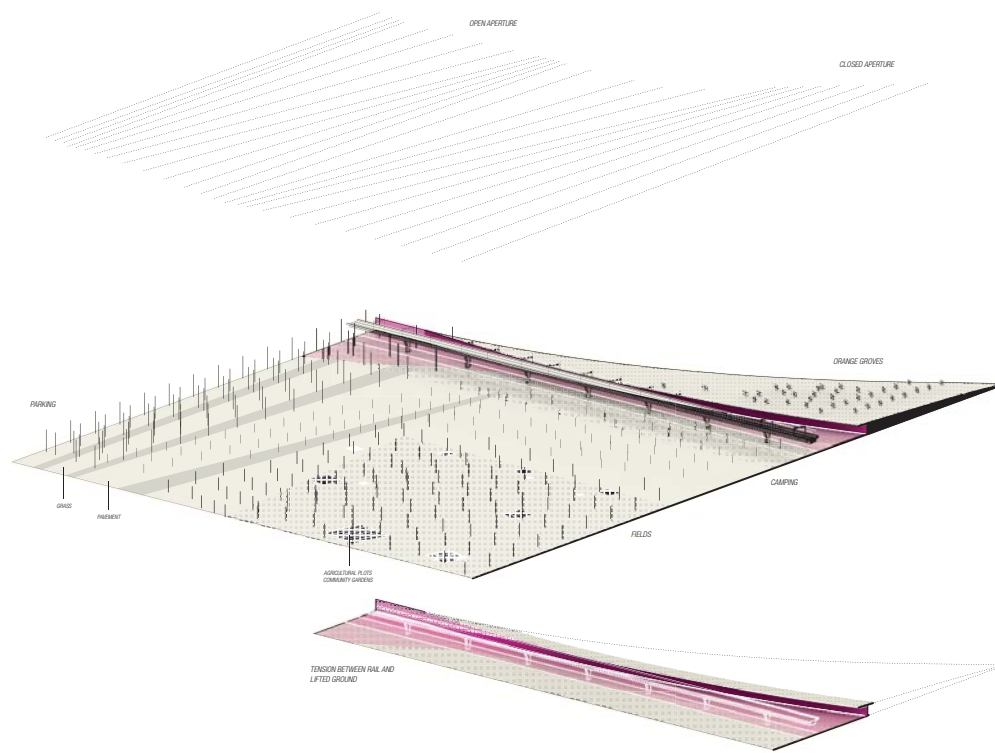
**Concert, Seating, Camping**

*Vertical: Marked Territory  
Pattern of extrusion for visual patterning*

*Rail Bypass*

*Horizontal: Ground Manipulation  
Insertion of voids for gathering /  
program view from rail*

**Agricultural Fields, Parking, Camping, Orchard**



*Vertical: Marked Territory  
Pattern of extrusion for visual patterning*

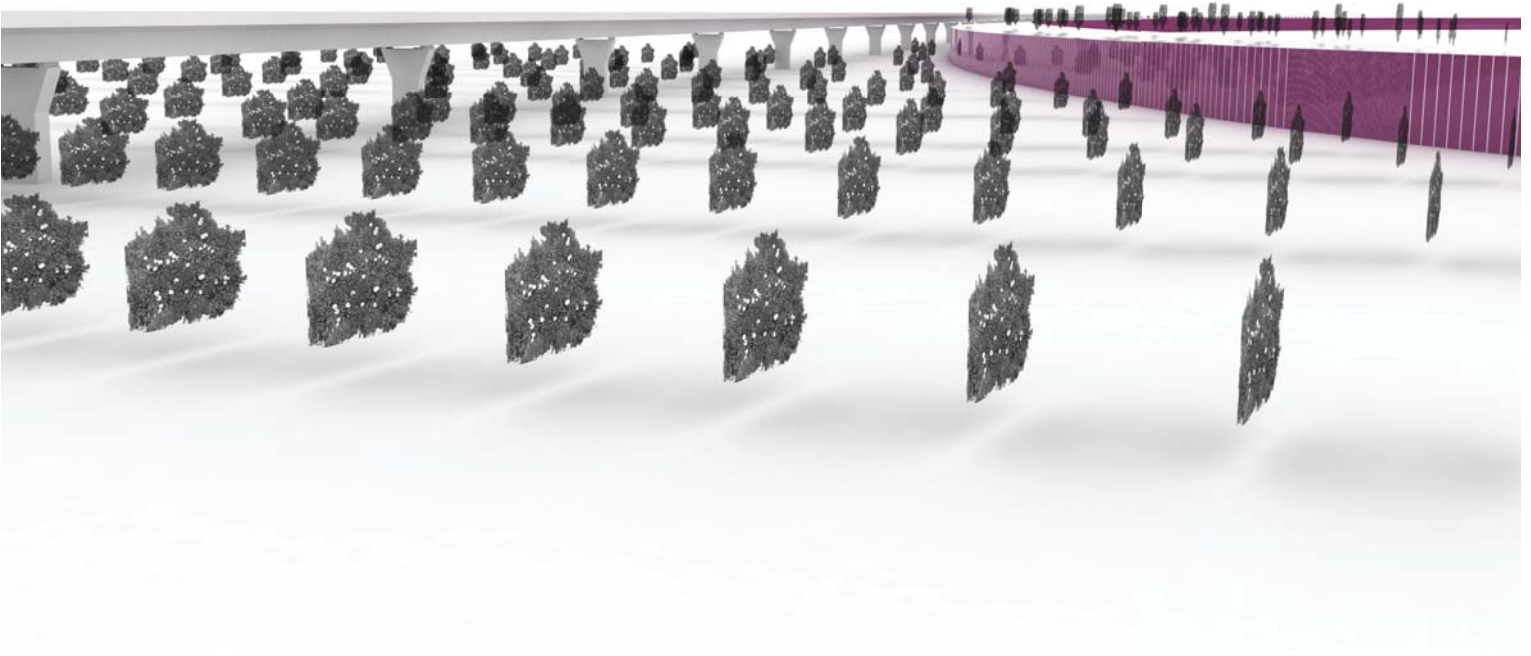
*Rail Bypass*

*Horizontal: Ground Manipulation  
Insertion of voids for gathering /  
program view from rail*

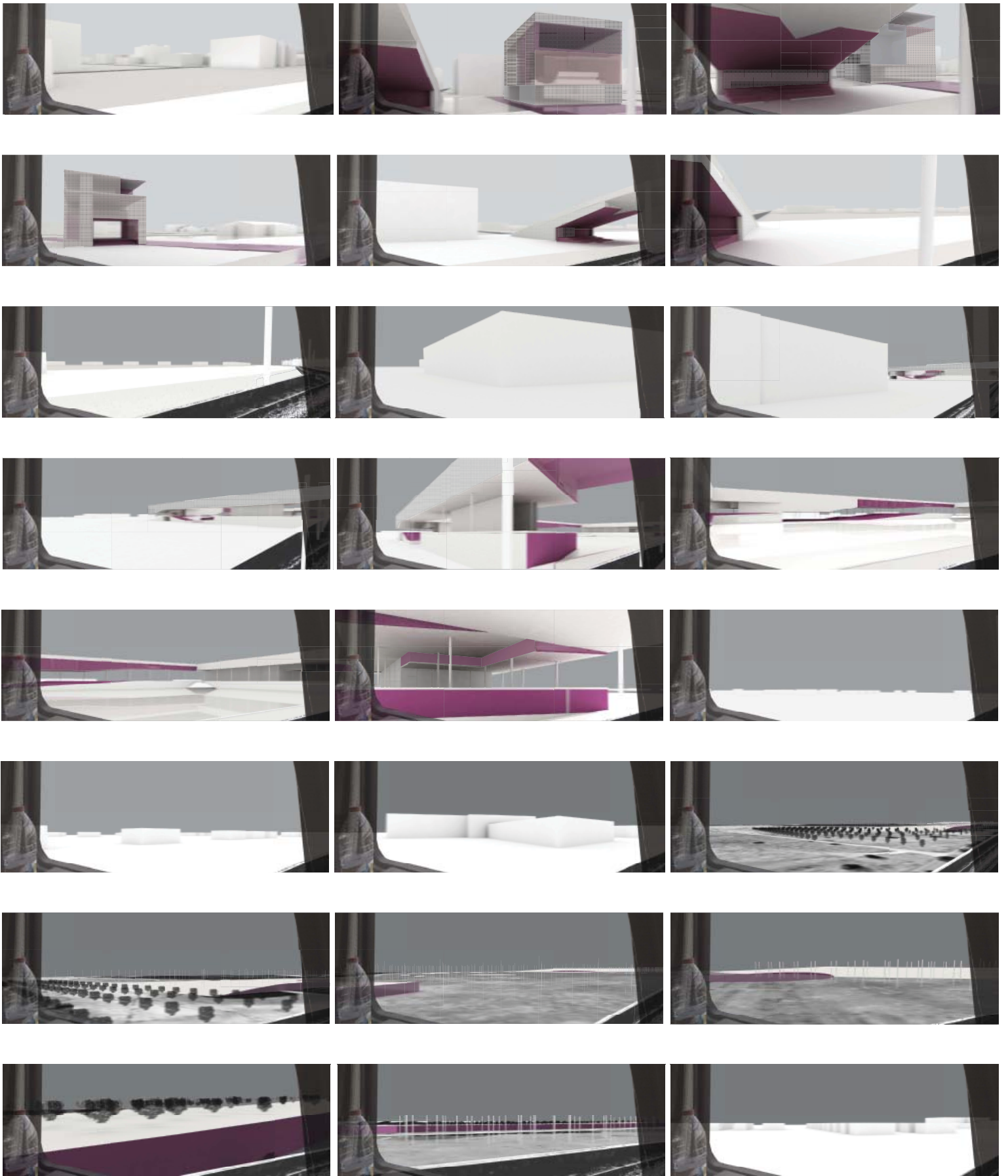
*Field, Suburban Development and Agricultural Land* Concertgoers occupy loosely programmed event space, while a rail car speeds by in a blur.



**Field, Suburban Development and Agricultural Land** The ground is marked by series of agricultural plantings, while horizontal bands of programmed space intersect the rail.







*Film Strip Sequencing of images seen as a train passenger.*

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## PRESENTATION AND BOARDS

Thesis Presentation January 13, 2011

Jurors included

Michael Bell *Columbia GSAPP*  
 Sarah Deyong *TAMU College of Architecture*  
 Florian Idenburg *Harvard Graduate School of Design*  
 Jonathan Massey *Syracuse School of Architecture*  
 Heather Roberge *UCLA Architecture & Design*  
 Albert Pope *Rice School of Architecture*  
 Ron Witte *Rice School of Architecture*  
 Troy Schaum *Rice School of Architecture*



3'-0"







# OBJECTS

0 - 70 MPH

GRID - BUILT UP OBJECTS

FORM

GROUPING

INTERIORITY

EMBEDDING

SEQUAL

BRIDGING

PROGRAM

OPENING ORGANIZATION

PRIMARY PROGRAM - PERFORMANCE ENVELOPE AS SPECIFIC VISUAL APERTURE

SUPPORTING PROGRAM - OCCUPYING THE THICKENED SPACE BETWEEN THE PERFORMANCE AND ENVELOPE

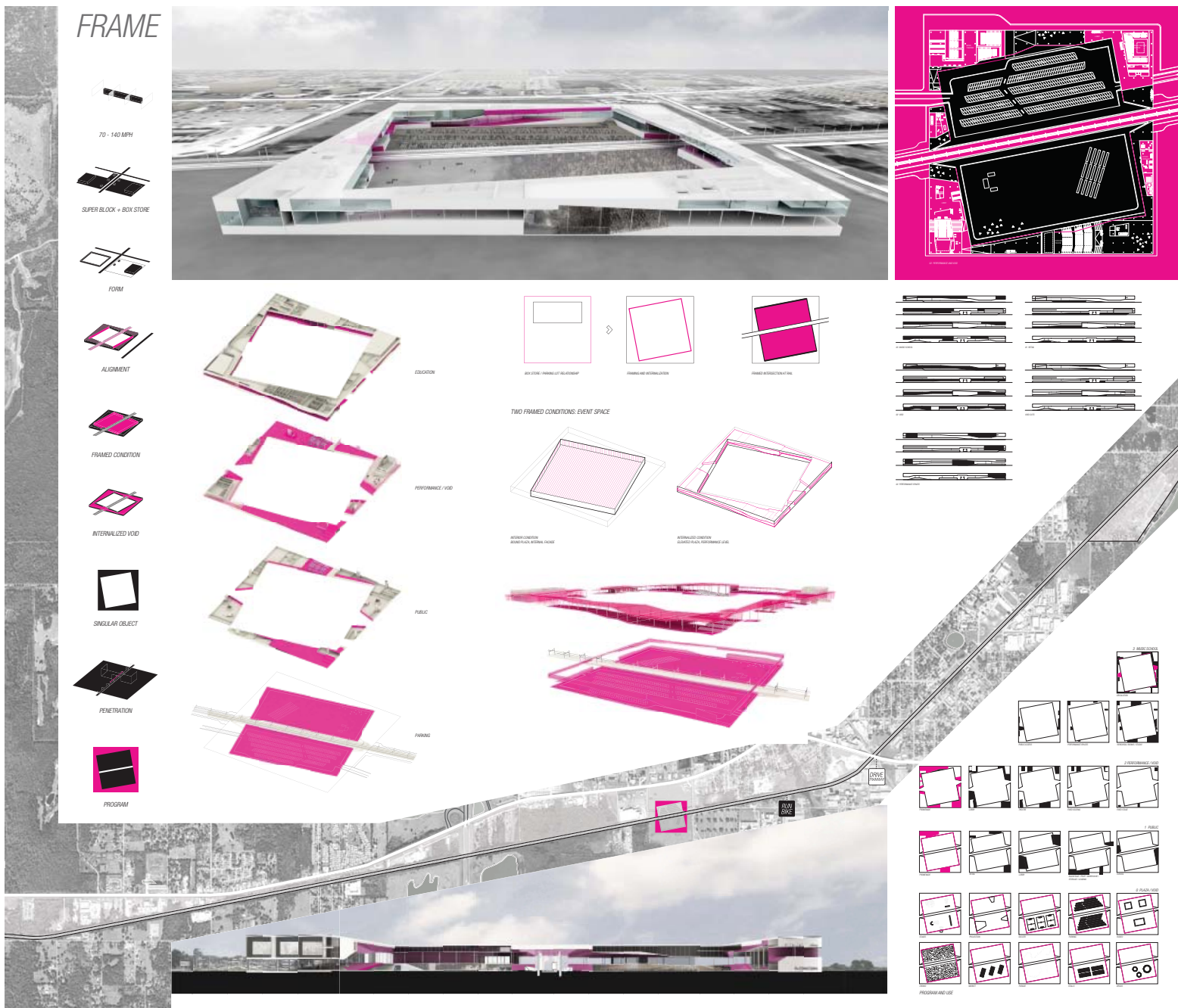
PROGRAM AND USE

01 DANCE STUDIOS AND BLACK BOX THEATRE

02 SOCIAL, RECREATIONAL STUDIOS AND SMALL THEATRE

03 EDUCATION CENTER AND OUTDOOR THEATRE











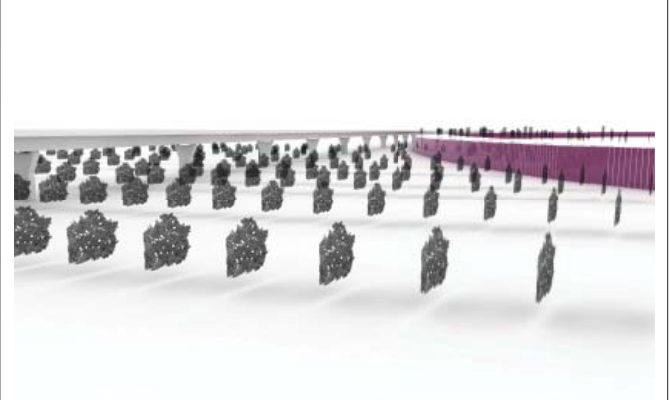
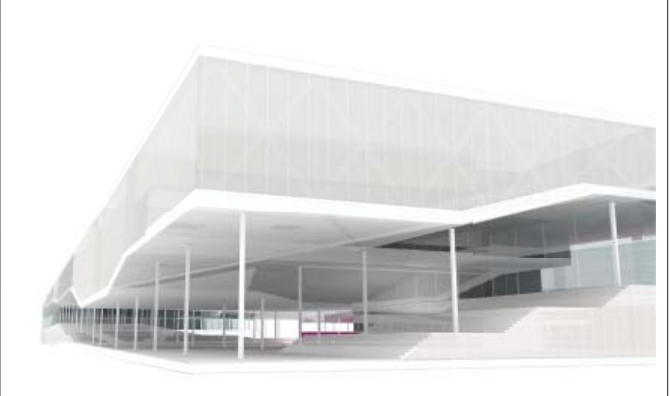
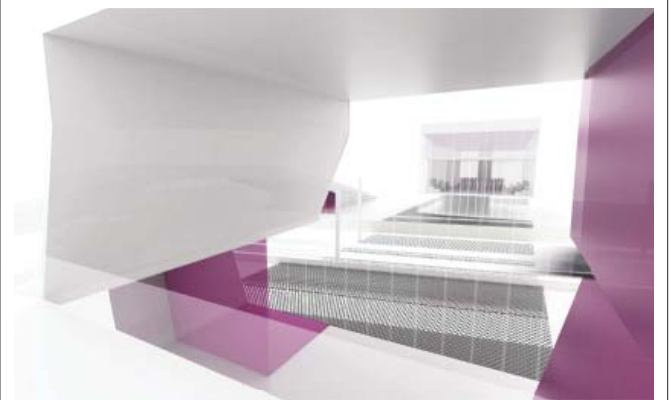
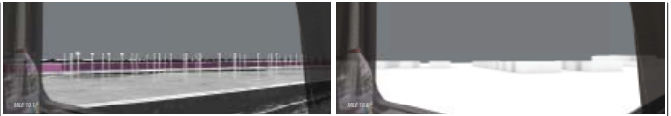
OBJECT



FRAME



FIELD



## A FAST AND EASY WAY OF LOOKING AT THIS THESIS



*Endless linear city, created and reinforced by the highway*



*Insertion of high speed rail*



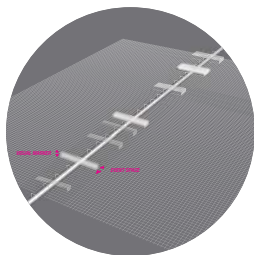
*Shifted perception of both territory and subject*



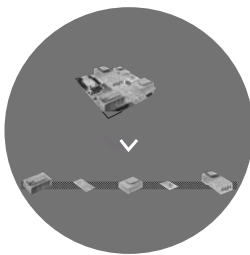
*Amplified issues of legibility: post-monument, post-sign*



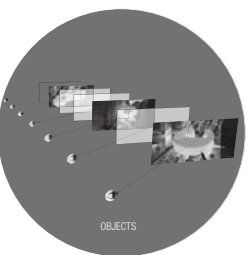
*Questioning collectivity in the new linear city*



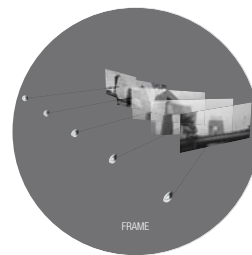
*Rail bypass as datum for architectural insertions*



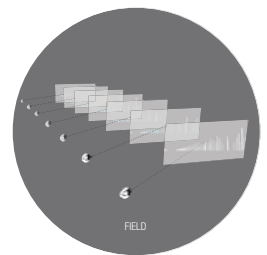
*Extended performance program along the high speed corridor*



*Calibration of distribution, scale, and duration of insertions in relation to speed*



FRAME



FIELD



## TRAVELLING FELLOWSHIP

Morris R. Pitman Award in Architecture

In May 2010, I received a travelling fellowship from the Rice School of Architecture to continue research on my thesis topic, investigating high speed travel and the spaces that they interact with, using super-urban sites outside of the United States to begin to define new urban legibilities for the post-highway city.

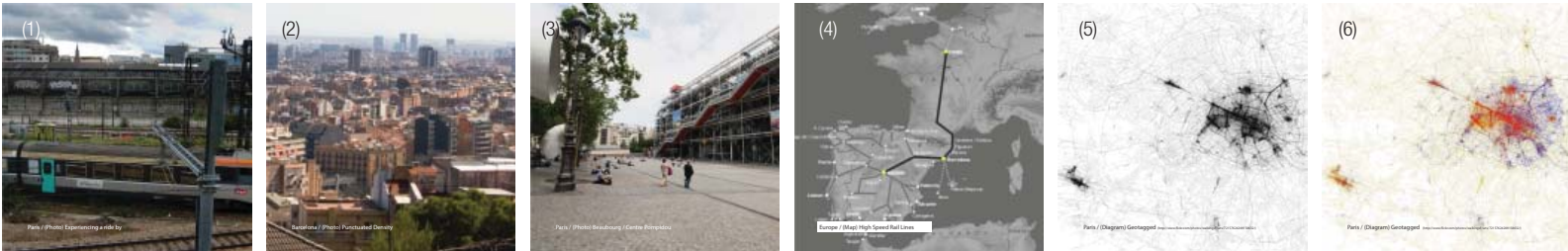
In my research, I focused on the following as aspects of a new high speed urban legibility:

- 01 The 21st century visual paradigm, shifted perception, and the need for instant legibility.
- 02 The relationship between city and high speed movement at the urban scale (urban and suburban conditions).
- 03 Sites of collectivity and cultural encounters.

Using these ideas as a lens, I questioned cities that operate as incubators of both collective and cultural space, and are sites of multitude of rail conditions, both high speed and local, within the urban fabric. My destinations for understanding what this new urban monumentality could be included Madrid, Barcelona, and Paris. Each city deals with the issues of infrastructure in different manners, providing conditions where both rail and cultural spaces are cut into the fabric.

The following is a presentation given for a Pecha Kucha - like panel held in August 2010.

## Slides and Text



I am interested in (1) speed as experienced via high speed rail  
2) resulting territorial perception of the city through the urban forms  
of density and sprawl, and (3) monumentality.

(4) Pursuing this high-speed-based research for me meant pushing  
the limits of the contemporary city to the accelerated speed of the  
super urban and a post highway city: all signs point to the high speed  
rail.

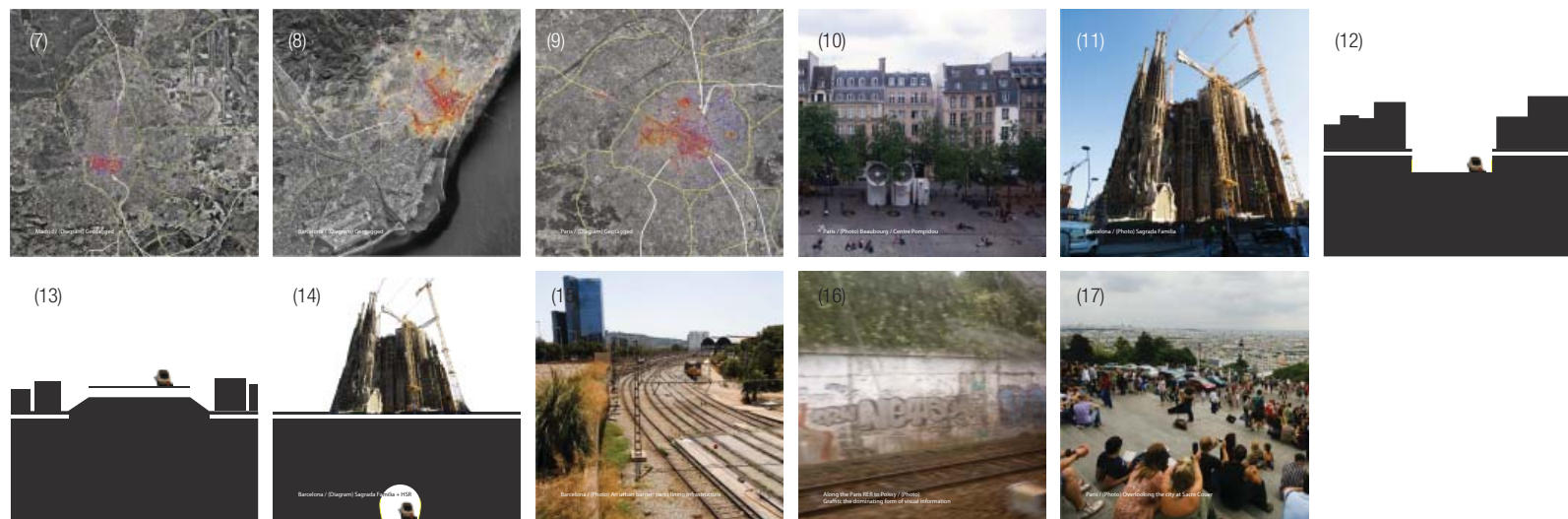
I visited three cities linked into a larger European network of high  
speed rail: Madrid, Barcelona, and Paris, in order to determine  
relationships between the city, this new super-network, and points of  
cultural monumentality.

(5) In order to explore the idea of monumentality within the cities,  
I used a mapping of photo locations via “geotagging,” which is

geographic locations of photos uploaded online. (6) These mappings  
of urban centers around the world by Eric Fischer provides a hierarchy  
of most visited sites within the city, a type of contemporary processing  
of visual recordings of monumentality. (blue are local photographs,  
red are tourist photographs)

(7) The following three maps of the city explore relationships between  
the urban and suburban, freeways, and locations of high speed rail  
lines, searching for some sort of mass cultural phenomenon between  
sites of density and sprawl.

Madrid’s ringed highways has created contemporary sprawl not  
unlike Houston.



(8) These maps also allow us to see the relationship between urban density and infrastructure: The high speed rail line north to Paris is tunneled traveling north through the most urban parts of the city. When density lessens, the line is sunken into the ground. Towards Madrid, the line switches between sunken, at grade and viaduct.

(9) Paris, home to the TGV, is linked to the rest of Europe through a dense network of freeways and high speed rail. In addition, local RER lines link rings of suburbs to the urban core of the city, providing sites to observe the effect of a dispersed legibility through the suburban condition.

(10) I visited sites of large scale cultural experiences, (11) and looked at their relationships to hsr lines, within the city and outside of the city: (12) lines that run underneath monuments rooted in the historic core (13) sunken lines moving farther out, (14) and

conditions surrounding lines outside of the city in ringed suburbs.

(15) An urban buffer exists between rail infrastructure and Olympic Village/ beach front development in the form of an unfrequented park and plaza. This park crosses the rail line, acting as a pedestrian bridge from metro stop to beach access, although seldom used and seemingly only by confused tourists. Built underneath this structure on the metro side is a small restaurant, as well as public restrooms. (16) As the RER moves from city to suburb, sunken rail lines provide an opportunity for urban and suburban artists for tagging. At high speed, how does information become legible?

(17) These are cities that operate as incubators of both collective / cultural space. The city, experienced from the highest vantage point within the Boulevard Peripherique in Montmartre, sprawls before large groups of tourists gathered to photograph the famous church, Sacre Couer, embedded in the fabric and mental image of the city.



**Paris / Exploring Moments of the Monumentality: Overlooking the City at Sacre Couer**

*The city, experienced from the highest vantage point within the Boulevard Peripherique in Montmartre, sprawls before large groups of tourists gathered to photograph the famous church, Sacre Couer. This point of religious gathering has become a monument of the tourist must-see, an area that once comprised the light-industrial outskirts of the city, now deeply embedded in the fabric and mental image of the city.*



**Along the Paris RER to Poissy / Graffiti at High Speed: the Dominating Form of Visual Information**

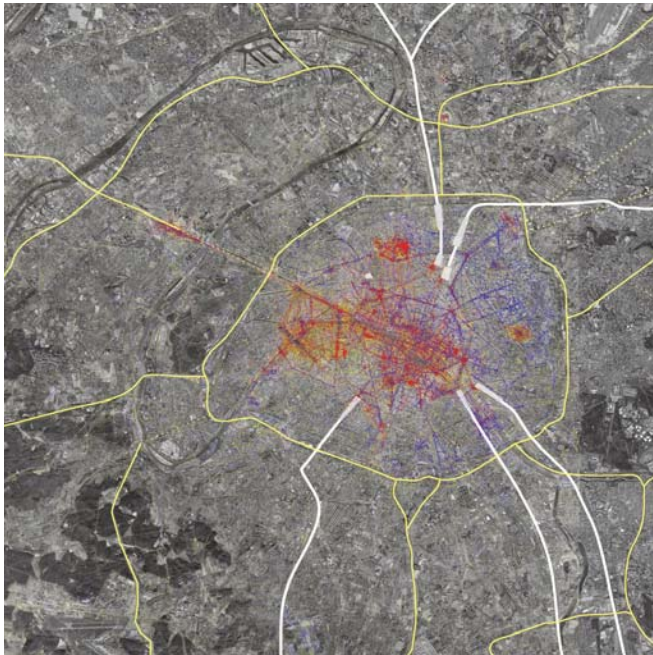
*As the RER moves from city to suburb, sunken rail lines provide an opportunity for urban and suburban artists for tagging. At high speed, how does information become legible?*



**Barcelona / Infrastructure and Development: Olympic Renewal**

*An urban buffer exists between rail infrastructure and Olympic Village/ beach front development in the form of an unfrequented park and plaza. This park crosses the rail line, acting as a pedestrian bridge from metro stop to beach access, although seldom used and seemingly only by confused tourists. Built underneath this structure on the metro side is a small restaurant, as well as public restrooms.*





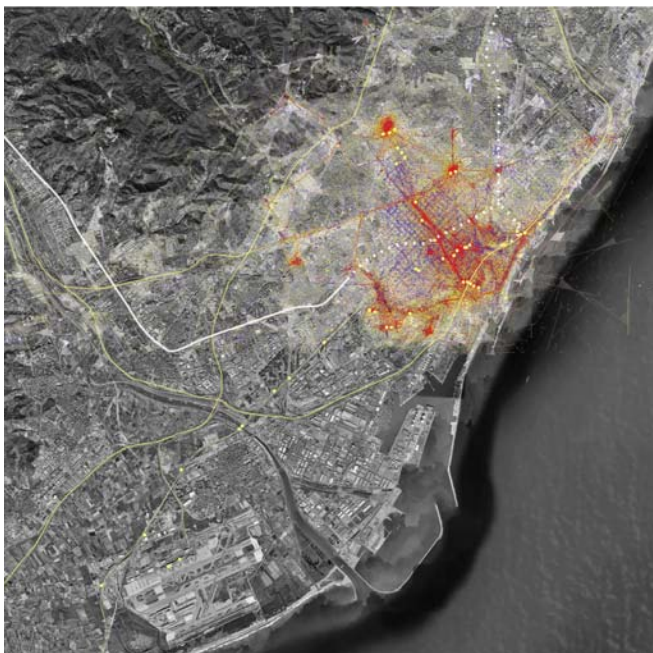
#### **Madrid / Geotagged Photographs, Freeways, and High Speed Rails**

When digital photographs are placed online, many times their geographic location is uploaded as well; this is known as "geotagging." A mapping of photo locations (blue are local photographs, red are tourist photographs) by Eric Fischer (<http://www.flickr.com/photos/walkingsf/sets/72157624209158632/>) provides a hierarchy of most visited sites within the city, a type of contemporary processing of visual recordings of monumentality. This map intends to map out relationships between the urban and suburban, freeways, and locations of high speed rail lines, searching for some sort of mass cultural phenomenon between sites of density and sprawl. Madrid's ringed highways has created contemporary sprawl not unlike Houston.



#### **Barcelona / Geotagged Photographs, Freeways, and High Speed Rails**

Barcelona has two major high speed rail lines that run through it. The high speed rail line north to Paris is tunneled traveling north through the most urban parts of the city. When density lessens, the line is sunken into the ground. Towards Madrid, the line switches between sunken, at grade and viaduct.



#### **Paris / Geotagged Photographs, Freeways, and High Speed Rails**

Paris, home to the TGV, is linked to the rest of Europe through a dense network of freeways and high speed rail. In addition, local RER lines link rings of suburbs to the urban core of the city, providing sites to observe the effect of a dispersed legibility through the suburban condition.



